B

SEQUENCE LISTING

<110> EVANS, RONALD M.
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DOWNES, MICHAEL R.

<120> FAMILY OF TRANSCRIPTIONAL CO-REPRESSORS THAT INTERACT WITH NUCLEAR HORMONE RECEPTORS AND USES THEREFOR

<130> SALK1510-3

<140> 09/522,753
<141> 2000-03-10

<150> 08/522,726
<151> 1995-09-01

<160> 52

<170> PatentIn Ver. 2.1

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Asp Pro Ser Ala Phe Ser Tyr Ala Pro Pro Gly His Pro Leu Pro Leu
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Gly Leu His Asp Thr Ala Arg Pro Val Leu Pro Arg Pro Pro Thr Ile
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Ser Asn Pro Pro Pro Leu Ile Ser Ser Ala Lys His Pro Ser Val Leu
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Glu Arg Gln Ile Gly Ala Ile Ser Gln Gly Met Ser Val Gln Leu His
            100                 105                 110

Val Pro Tyr Ser Glu His Ala Lys Ala Pro Val Gly Pro Val Thr Met
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Gly Leu Pro Leu Pro Met Asp Pro Lys Lys Leu Ala Pro Phe Ser Gly
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Val Lys Gln Glu Gln Leu Ser Pro Arg Gly Gln Ala Gly Pro Pro Glu
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Thr Arg Val Pro Ser Asp Ser Ala Ile Thr Tyr Arg Gly Ser Ile Thr
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His Gly Thr Pro Ala Asp Val Leu Tyr Lys Gly Thr Ile Thr Arg Ile
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Ile Gly Glu Asp Ser Pro Ser Arg Leu Asp Arg Gly Arg Glu Asp Ser
225                 230                 235                 240

Leu Pro Lys Gly His Val Ile Tyr Glu Gly Lys Lys Gly His Val Leu
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Ser Tyr Glu Gly Gly Met Ser Val Thr Gln Cys Ser Lys Glu Asp Gly
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Arg Ser Ser Ser Gly Pro Pro His Glu Thr Ala Ala Pro Lys Arg Thr
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Tyr Asp Met Met Glu Gly Arg Val Gly Arg Ala Ile Ser Ser Ala Ser
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Ile Glu Gly Leu Met Gly Arg Ala Ile Pro Pro Glu Arg His Ser Pro
305                 310                 315                 320

His His Leu Lys Glu Gln His His Ile Arg Gly Ser Ile Thr Gln Gly
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Ile Pro Arg Ser Tyr Val Glu Ala Gln Glu Asp Tyr Leu Arg Arg Glu
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Ala Lys Leu Leu Lys Arg Glu Gly Thr Pro Pro Pro Pro Pro Pro Ser
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Arg Asp Leu Thr Glu Ala Tyr Lys Thr Gln Ala Leu Gly Pro Leu Lys
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Leu Lys Pro Ala His Glu Gly Leu Val Ala Thr Val Lys Glu Ala Gly
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Arg Ser Ile His Glu Ile Pro Arg Glu Glu Leu Arg His Thr Pro Glu
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Leu Pro Leu Ala Pro Arg Pro Leu Lys Glu Gly Ser Ile Thr Gln Gly
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Thr Pro Leu Lys Tyr Asp Thr Gly Ala Ser Thr Thr Gly Ser Lys Lys
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His Asp Val Arg Ser Leu Ile Gly Ser Pro Gly Arg Thr Phe Pro Pro
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Ala Gly His Leu Pro Arg Gly Ser Pro Val Thr Met Arg Glu Pro Thr
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Pro Arg Leu Gln Glu Gly Ser Leu Ser Ser Ser Lys Ala Ser Gln Asp
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Arg Lys Leu Thr Ser Thr Pro Arg Glu Ile Ala Lys Ser Pro His Ser
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Thr Val Pro Glu His His Pro His Pro Ile Ser Pro Tyr Glu His Leu
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Leu Arg Gly Val Ser Gly Val Asp Leu Tyr Arg Ser His Ile Pro Leu
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Ala Ala Tyr Tyr Leu Pro Arg His Leu Ala Pro Asn Pro Thr Tyr Pro
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His Leu Tyr Pro Pro Tyr Leu Ile Arg Gly Tyr Pro Asp Thr Ala Ala
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Leu Glu Asn Arg Gln Thr Ile Ile Asn Asp Tyr Ile Thr Ser Gln Gln
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Met His His Asn Thr Ala Thr Ala Met Ala Gln Arg Ala Asp Met Leu
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Arg Gly Leu Ser Pro Arg Glu Ser Ser Leu Ala Leu Asn Tyr Ala Ala
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Gly Pro Arg Gly Ile Ile Asp Leu Ser Gln Val Pro His Leu Pro Val
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Leu Val Pro Pro Thr Pro Gly Thr Pro Ala Thr Ala Met Asp Arg Leu
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Ala Tyr Leu Pro Thr Ala Pro Gln Pro Phe Ser Ser Arg His Ser Ser
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Ser Pro Leu Ser Pro Gly Gly Pro Thr His Leu Thr Lys Pro Thr Thr
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Ser His Ala His Gln His Ser Pro Ile Ser Pro Arg Thr Gln Asp Ala
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Leu Gln Gln Arg Pro Ser Val Leu His Asn Thr Gly Met Lys Gly Ile
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Ile Thr Ala Val Glu Pro Ser Lys Pro Thr Val Leu Arg Ser Thr Ser
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Thr Ser Ser Pro Val Arg Pro Ala Ala Thr Phe Pro Pro Ala Thr His
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Cys Pro Leu Gly Gly Thr Leu Asp Gly Val Tyr Pro Thr Leu Met Glu
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Pro Val Leu Leu Pro Lys Glu Ala Pro Arg Val Ala Arg Pro Glu Arg
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Pro Arg Ala Asp Thr Gly His Ala Phe Leu Ala Lys Pro Pro Ala Arg
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Ser Gly Leu Glu Pro Ala Ser Ser Pro Ser Lys Gly Ser Glu Pro Arg
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Pro Leu Val Pro Pro Val Ser Gly His Ala Thr Ile Ala Arg Thr Pro
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Ala Lys Asn Leu Ala Pro His His Ala Ser Pro Asp Pro Pro Ala Pro
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Pro Ala Ser Ala Ser Asp Pro His Arg Glu Lys Thr Gln Ser Lys Pro
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Phe Ser Ile Gln Glu Leu Glu Leu Arg Ser Leu Gly Tyr His Gly Ser
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Ser Tyr Ser Pro Glu Gly Val Glu Pro Val Ser Pro Val Ser Ser Pro
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Ser Leu Thr His Asp Lys Gly Leu Pro Lys His Leu Glu Glu Leu Asp
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Lys Ser His Leu Glu Gly Glu Leu Arg Pro Lys Gln Pro Gly Pro Val
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Glu Ser Gln Pro Ser Ser Ser Pro Leu Leu Gln Thr Ala Pro Gly Val
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Lys Gly His Gln Arg Val Val Thr Leu Ala Gln His Ile Ser Glu Val
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Ile Thr Gln Asp Tyr Thr Arg His His Pro Gln Gln Leu Ser Ala Pro
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Glu Tyr Asn Ile Ser Gln Pro Gly Thr Glu Ile Phe Asn Met Pro Ala
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Ile Thr Gly Thr Gly Leu Met Thr Tyr Arg Ser Gln Ala Val Gln Glu
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His Ala Ser Thr Asn Met Gly Leu Glu Ala Ile Ile Arg Lys Ala Leu
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Met Gly Lys Tyr Asp Gln Trp Glu Glu Ser Pro Pro Leu Ser Ala Asn
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Ala Phe Asn Pro Leu Asn Ala Ser Ala Ser Leu Pro Ala Ala Met Pro
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Ile Thr Ala Ala Asp Gly Arg Ser Asp His Thr Leu Thr Ser Pro Gly
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Lys Ser Pro Ala Pro Gly Leu Ala Ser Gly Asp Arg Pro Pro Ser Val
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Asn Arg Val Trp Glu Asp Arg Pro Ser Ser Ala Gly Ser Thr Pro Phe
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Pro Tyr Asn Pro Leu Ile Met Arg Leu Gln Ala Gly Val Met Ala Ser
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Pro Pro Pro Pro Gly Leu Pro Ala Gly Ser Gly Pro Leu Ala Gly Pro
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Thr His Thr Asp Val Gly Leu Leu Glu Tyr Gln His His Ser Arg Asp
         35                  40                  45

Tyr Ala Ser His Leu Ser Pro Gly Ser Ile Ile Gln Pro Gln Arg Arg
     50                  55                  60

Arg Pro Ser Leu Leu Ser Glu Phe Gln Pro Gly Asn Glu Arg Ser Gln
 65                  70                  75                  80

Glu Leu His Leu Arg Pro Glu Ser His Ser Tyr Leu Pro Glu Leu Gly
                85                  90                  95

Lys Ser Glu Met Glu Phe Ile Glu Ser Lys Arg Pro Arg Leu Glu Leu
            100                 105                 110

Leu Pro Asp Pro Leu Leu Arg Pro Ser Pro Leu Leu Ala Thr Gly Gln
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Pro Ala Gly Ser Glu Asp Leu Thr Lys Asp Arg Ser Leu Thr Gly Lys
    130                 135                 140

Leu Glu Pro Val Ser Pro Pro Ser Pro Pro His Thr Asp Pro Glu Leu
145                 150                 155                 160

Glu Leu Val Pro Pro Arg Leu Ser Lys Glu Glu Leu Ile Gln Asn Met
                165                 170                 175

Asp Arg Val Asp Arg Glu Ile Thr Met Val Glu Gln Gln Ile Ser Lys
            180                 185                 190

Leu Lys Lys Lys Gln Gln Gln Leu Glu Glu Glu Ala Ala Lys Pro Pro
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Glu Pro Glu Lys Pro Val Ser Pro Pro Pro Ile Glu Ser Lys His Arg
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Ser Leu Val Gln Ile Ile Tyr Asp Glu Asn Arg Lys Lys Ala Glu Ala
225                 230                 235                 240

Ala His Arg Ile Leu Glu Gly Leu Gly Pro Gln Val Glu Leu Pro Leu
                245                 250                 255

Tyr Asn Gln Pro Ser Asp Thr Arg Gln Tyr His Glu Asn Ile Lys Ile
            260                 265                 270

Asn Gln Ala Met Arg Lys Lys Leu Ile Leu Tyr Phe Lys Arg Arg Asn
        275                 280                 285

His Ala Arg Lys Gln Trp Lys Gln Lys Phe Cys Gln Arg Tyr Asp Gln
    290                 295                 300

Leu Met Glu Ala Leu Glu Lys Lys Val Glu Arg Ile Glu Asn Asn Pro
305                 310                 315                 320

Arg Arg Arg Ala Lys Glu Ser Lys Val Arg Glu Tyr Tyr Glu Lys Gln
                325                 330                 335

Phe Pro Glu Ile Arg Lys Gln Arg Glu Leu Gln Glu Arg Met Gln Ser
            340                 345                 350

Arg Val Gly Gln Arg Gly Ser Gly Leu Ser Met Ser Ala Ala Arg Ser
        355                 360                 365

Glu His Glu Val Ser Glu Ile Ile Asp Gly Leu Ser Glu Gln Glu Asn
    370                 375                 380

Leu Glu Lys Gln Met Arg Gln Leu Ala Val Ile Pro Pro Met Leu Tyr
385                 390                 395                 400

Asp Ala Asp Gln Gln Arg Ile Lys Phe Ile Asn Met Asn Gly Leu Met
                405                 410                 415

Ala Asp Pro Met Lys Val Tyr Lys Asp Arg Gln Val Met Asn Met Trp
            420                 425                 430
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Ser Glu Gln Glu Lys Glu Thr Phe Arg Glu Lys Phe Met Gln His Pro
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Lys Asn Phe Gly Leu Ile Ala Ser Phe Leu Glu Arg Lys Thr Val Ala
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Glu Cys Val Leu Tyr Tyr Tyr Leu Thr Lys Lys Asn Glu Asn Tyr Lys
465                 470                 475                 480

Ser Leu Val Arg Arg Ser Tyr Arg Arg Arg Gly Lys Ser Gln Gln Gln
                485                 490                 495

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Pro Met
            500                 505                 510

Pro Arg Ser Ser Gln Glu Glu Lys Asp Glu Lys Glu Lys Glu Lys Glu
        515                 520                 525

Ala Glu Lys Glu Glu Glu Lys Pro Glu Val Glu Asn Asp Lys Glu Asp
    530                 535                 540

Leu Leu Lys Glu Lys Thr Asp Asp Thr Ser Gly Glu Asp Asn Asp Glu
545                 550                 555                 560

Lys Glu Ala Val Ala Ser Lys Gly Arg Lys Thr Ala Asn Ser Gln Gly
                565                 570                 575

Arg Arg Lys Gly Arg Ile Thr Arg Ser Met Ala Asn Glu Ala Asn Ser
            580                 585                 590

Glu Glu Ala Ile Thr Pro Gln Gln Ser Ala Glu Leu Ala Ser Met Glu
        595                 600                 605

Leu Asn Glu Ser Ser Arg Trp Thr Glu Glu Glu Met Glu Thr Ala Lys
    610                 615                 620

Lys Gly Leu Leu Glu His Gly Arg Asn Trp Ser Ala Ile Ala Arg Met
625                 630                 635                 640

Val Gly Ser Lys Thr Val Ser Gln Cys Lys Asn Phe Tyr Phe Asn Tyr
                645                 650                 655

Lys Lys Arg Gln Asn Leu Asp Glu Ile Leu Gln Gln His Lys Leu Lys
            660                 665                 670

Met Glu Lys Glu Arg Asn Ala Arg Arg Lys Lys Lys Lys Ala Pro Ala
        675                 680                 685

Ala Ala Ser Glu Glu Ala Ala Phe Pro Pro Val Val Glu Asp Glu Glu
    690                 695                 700

Met Glu Ala Ser Gly Val Ser Gly Asn Glu Glu Glu Met Val Glu Glu
705                 710                 715                 720

Ala Glu Ala Leu His Ala Ser Gly Asn Glu Val Pro Arg Gly Glu Cys
                725                 730                 735
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Ser Gly Pro Ala Thr Val Asn Asn Ser Ser Asp Thr Glu Ser Ile Pro
            740                 745                 750

Ser Pro His Thr Glu Ala Ala Lys Asp Thr Gly Gln Asn Gly Pro Lys
        755                 760                 765

Pro Pro Ala Thr Leu Gly Ala Asp Gly Pro Pro Pro Gly Pro Pro Thr
    770                 775                 780

Pro Pro Arg Arg Thr Ser Arg Ala Pro Ile Glu Pro Thr Pro Ala Ser
785                 790                 795                 800

Glu Ala Thr Gly Ala Pro Thr Pro Pro Pro Ala Pro Pro Ser Pro Ser
                805                 810                 815

Ala Pro Pro Pro Val Val Pro Lys Glu Glu Lys Glu Glu Glu Thr Ala
            820                 825                 830

Ala Ala Pro Pro Val Glu Glu Gly Glu Glu Gln Lys Pro Pro Ala Ala
        835                 840                 845

Glu Glu Leu Ala Val Asp Thr Gly Lys Ala Glu Glu Pro Val Lys Ser
    850                 855                 860

Glu Cys Thr Glu Glu Ala Glu Glu Gly Pro Ala Lys Gly Lys Asp Ala
865                 870                 875                 880

Glu Ala Ala Glu Ala Thr Ala Glu Gly Ala Leu Lys Ala Glu Lys Lys
                885                 890                 895

Glu Gly Gly Ser Gly Arg Ala Thr Thr Ala Lys Ser Ser Gly Ala Pro
            900                 905                 910

Gln Asp Ser Asp Ser Ser Ala Thr Cys Ser Ala Asp Glu Val Asp Glu
        915                 920                 925

Ala Glu Gly Gly Asp Lys Asn Arg Leu Leu Ser Pro Arg Pro Ser Leu
    930                 935                 940

Leu Thr Pro Thr Gly Asp Pro Arg Ala Asn Ala Ser Pro Gln Lys Pro
945                 950                 955                 960

Leu Asp Leu Lys Gln Leu Lys Gln Arg Ala Ala Ala Ile Pro Pro Ile
                965                 970                 975

Gln Val Thr Lys Val His Glu Pro Pro Arg Glu Asp Ala Ala Pro Thr
            980                 985                 990

Lys Pro Ala Pro Pro Ala Pro Pro Pro Pro Gln Asn Leu Gln Pro Glu
        995                1000                1005

Ser Asp Ala Pro Gln Gln Pro Gly Ser Ser Pro Arg Gly Lys Ser Arg
   1010                1015                1020

Ser Pro Ala Pro Pro Ala Asp Lys Glu Ala Phe Ala Ala Glu Ala Gln
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Lys Leu Pro Gly Asp Pro Pro Cys Trp Thr Ser Gly Leu Pro Phe Pro
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Val Pro Pro Arg Glu Val Ile Lys Ala Ser Pro His Ala Pro Asp Pro
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Ser Ala Phe Ser Tyr Ala Pro Pro Gly His Pro Leu Pro Leu Gly Leu
1075 1080 1085

His Asp Thr Ala Arg Pro Val Leu Pro Arg Pro Pro Thr Ile Ser Asn
1090 1095 1100

Pro Pro Pro Leu Ile Ser Ser Ala Lys His Pro Ser Val Leu Glu Arg
1105 1110 1115 1120

Gln Ile Gly Ala Ile Ser Gln Gly Met Ser Val Gln Leu His Val Pro
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Tyr Ser Glu His Ala Lys Ala Pro Val Gly Pro Val Thr Met Gly Leu
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Pro Leu Pro Met Asp Pro Lys Lys Leu Ala Pro Phe Ser Gly Val Lys
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Gln Glu Gln Leu Ser Pro Arg Gly Gln Ala Gly Pro Pro Glu Ser Leu
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Gly Val Pro Thr Ala Gln Glu Ala Ser Val Leu Arg Gly Thr Ala Leu
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Gly Ser Val Pro Gly Gly Ser Ile Thr Lys Gly Ile Pro Ser Thr Arg
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Val Pro Ser Asp Ser Ala Ile Thr Tyr Arg Gly Ser Ile Thr His Gly
1220 1225 1230

Thr Pro Ala Asp Val Leu Tyr Lys Gly Thr Ile Thr Arg Ile Ile Gly
1235 1240 1245

Glu Asp Ser Pro Ser Arg Leu Asp Arg Gly Arg Glu Asp Ser Leu Pro
1250 1255 1260

Lys Gly His Val Ile Tyr Glu Gly Lys Lys Gly His Val Leu Ser Tyr
1265 1270 1275 1280

Glu Gly Gly Met Ser Val Thr Gln Cys Ser Lys Glu Asp Gly Arg Ser
1285 1290 1295

Ser Ser Gly Pro Pro His Glu Thr Ala Ala Pro Lys Arg Thr Tyr Asp
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Met Met Glu Gly Arg Val Gly Arg Ala Ile Ser Ser Ala Ser Ile Glu
1315 1320 1325

Gly Leu Met Gly Arg Ala Ile Pro Pro Glu Arg His Ser Pro His His
1330 1335 1340

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Leu Lys Glu Gln His His Ile Arg Gly Ser Ile Thr Gln Gly Ile Pro
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Arg Ser Tyr Val Glu Ala Gln Glu Asp Tyr Leu Arg Arg Glu Ala Lys
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Leu Leu Lys Arg Glu Gly Thr Pro Pro Pro Pro Pro Pro Ser Arg Asp
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Leu Thr Glu Ala Tyr Lys Thr Gln Ala Leu Gly Pro Leu Lys Leu Lys
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Pro Ala His Glu Gly Leu Val Ala Thr Val Lys Glu Ala Gly Arg Ser
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Ile His Glu Ile Pro Arg Glu Glu Leu Arg His Thr Pro Glu Leu Pro
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Leu Ala Pro Arg Pro Leu Lys Glu Gly Ser Ile Thr Gln Gly Thr Pro
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Leu Lys Tyr Asp Thr Gly Ala Ser Thr Thr Gly Ser Lys Lys His Asp
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Val Arg Ser Leu Ile Gly Ser Pro Gly Arg Thr Phe Pro Pro Val His
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Pro Leu Asp Val Met Ala Asp Ala Arg Ala Leu Glu Arg Ala Cys Tyr
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Glu Glu Ser Leu Lys Ser Arg Pro Gly Thr Ala Ser Ser Ser Gly Gly
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Ser Ile Ala Arg Gly Ala Pro Val Ile Val Pro Glu Leu Gly Lys Pro
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Arg Gln Ser Pro Leu Thr Tyr Glu Asp His Gly Ala Pro Phe Ala Gly
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His Leu Pro Arg Gly Ser Pro Val Thr Met Arg Glu Pro Thr Pro Arg
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Leu Gln Glu Gly Ser Leu Ser Ser Ser Lys Ala Ser Gln Asp Arg Lys
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Leu Thr Ser Thr Pro Arg Glu Ile Ala Lys Ser Pro His Ser Thr Val
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Pro Glu His His Pro His Pro Ile Ser Pro Tyr Glu His Leu Leu Arg
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Gly Val Ser Gly Val Asp Leu Tyr Arg Ser His Ile Pro Leu Ala Phe
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Asp Pro Thr Ser Ile Pro Arg Gly Ile Pro Leu Asp Ala Ala Ala Ala
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Tyr Tyr Leu Pro Arg His Leu Ala Pro Asn Pro Thr Tyr Pro His Leu
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Tyr Pro Pro Tyr Leu Ile Arg Gly Tyr Pro Asp Thr Ala Ala Leu Glu
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Asn Arg Gln Thr Ile Ile Asn Asp Tyr Ile Thr Ser Gln Gln Met His
1685 1690 1695

His Asn Thr Ala Thr Ala Met Ala Gln Arg Ala Asp Met Leu Arg Gly
1700 1705 1710

Leu Ser Pro Arg Glu Ser Ser Leu Ala Leu Asn Tyr Ala Ala Gly Pro
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Arg Gly Ile Ile Asp Leu Ser Gln Val Pro His Leu Pro Val Leu Val
1730 1735 1740

Pro Pro Thr Pro Gly Thr Pro Ala Thr Ala Met Asp Arg Leu Ala Tyr
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Leu Pro Thr Ala Pro Gln Pro Phe Ser Ser Arg His Ser Ser Ser Pro
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Leu Ser Pro Gly Gly Pro Thr His Leu Thr Lys Pro Thr Thr Thr Ser
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Ser Ser Glu Arg Glu Arg Asp Arg Asp Arg Glu Arg Asp Arg Asp Arg
1795 1800 1805

Glu Arg Glu Lys Ser Ile Leu Thr Ser Thr Thr Thr Val Glu His Ala
1810 1815 1820

Pro Ile Trp Arg Pro Gly Thr Glu Gln Ser Ser Gly Ser Ser Gly Ser
1825 1830 1835 1840

Ser Gly Gly Gly Gly Gly Ser Ser Ser Arg Pro Ala Ser His Ser His
1845 1850 1855

Ala His Gln His Ser Pro Ile Ser Pro Arg Thr Gln Asp Ala Leu Gln
1860 1865 1870

Gln Arg Pro Ser Val Leu His Asn Thr Gly Met Lys Gly Ile Ile Thr
1875 1880 1885

Ala Val Glu Pro Ser Lys Pro Thr Val Leu Arg Ser Thr Ser Thr Ser
1890 1895 1900

Ser Pro Val Arg Pro Ala Ala Thr Phe Pro Pro Ala Thr His Cys Pro
1905 1910 1915 1920

Leu Gly Gly Thr Leu Asp Gly Val Tyr Pro Thr Leu Met Glu Pro Val
1925 1930 1935

Leu Leu Pro Lys Glu Ala Pro Arg Val Ala Arg Pro Glu Arg Pro Arg
1940 1945 1950

Ala Asp Thr Gly His Ala Phe Leu Ala Lys Pro Pro Ala Arg Ser Gly
1955 1960 1965

Leu Glu Pro Ala Ser Ser Pro Ser Lys Gly Ser Glu Pro Arg Pro Leu
1970 1975 1980

Val Pro Pro Val Ser Gly His Ala Thr Ile Ala Arg Thr Pro Ala Lys
1985 1990 1995 2000

Asn Leu Ala Pro His His Ala Ser Pro Asp Pro Pro Ala Pro Pro Ala
2005 2010 2015

Ser Ala Ser Asp Pro His Arg Glu Lys Thr Gln Ser Lys Pro Phe Ser
2020 2025 2030

Ile Gln Glu Leu Glu Leu Arg Ser Leu Gly Tyr His Gly Ser Ser Tyr
2035 2040 2045

Ser Pro Glu Gly Val Glu Pro Val Ser Pro Val Ser Ser Pro Ser Leu
2050 2055 2060

Thr His Asp Lys Gly Leu Pro Lys His Leu Glu Glu Leu Asp Lys Ser
2065 2070 2075 2080

His Leu Glu Gly Glu Leu Arg Pro Lys Gln Pro Gly Pro Val Lys Leu
2085 2090 2095

Gly Gly Glu Ala Ala His Leu Pro His Leu Arg Pro Leu Pro Glu Ser
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Gln Pro Ser Ser Ser Pro Leu Leu Gln Thr Ala Pro Gly Val Lys Gly
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His Gln Arg Val Val Thr Leu Ala Gln His Ile Ser Glu Val Ile Thr
2130 2135 2140

Gln Asp Tyr Thr Arg His His Pro Gln Gln Leu Ser Ala Pro Leu Pro
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Ala Pro Leu Tyr Ser Phe Pro Gly Ala Ser Cys Pro Val Leu Asp Leu
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Arg Arg Pro Pro Ser Asp Leu Tyr Leu Pro Pro Pro Asp His Gly Ala
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Pro Ala Arg Gly Ser Pro His Ser Glu Gly Gly Lys Arg Ser Pro Glu
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Pro Asn Lys Thr Ser Val Leu Gly Gly Gly Glu Asp Gly Ile Glu Pro
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Val Ser Pro Pro Glu Gly Met Thr Glu Pro Gly His Ser Arg Ser Ala
2225 2230 2235 2240

Val Tyr Pro Leu Leu Tyr Arg Asp Gly Glu Gln Thr Glu Pro Ser Arg
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Met Gly Ser Lys Ser Pro Gly Asn Thr Ser Gln Pro Pro Ala Phe Phe
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Ser Lys Leu Thr Glu Ser Asn Ser Ala Met Val Lys Ser Lys Lys Gln
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Glu Ile Asn Lys Lys Leu Asn Thr His Asn Arg Asn Glu Pro Glu Tyr
   2290                2295                2300

Asn Ile Ser Gln Pro Gly Thr Glu Ile Phe Asn Met Pro Ala Ile Thr
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Gly Thr Gly Leu Met Thr Tyr Arg Ser Gln Ala Val Gln Glu His Ala
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Ser Thr Asn Met Gly Leu Glu Ala Ile Ile Arg Lys Ala Leu Met Gly
           2340                2345                2350

Lys Tyr Asp Gln Trp Glu Glu Ser Pro Pro Leu Ser Ala Asn Ala Phe
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Asn Pro Leu Asn Ala Ser Ala Ser Leu Pro Ala Ala Met Pro Ile Thr
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Ala Ala Asp Gly Arg Ser Asp His Thr Leu Thr Ser Pro Gly Gly Gly
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Gly Lys Ala Lys Val Ser Gly Arg Pro Ser Ser Arg Lys Ala Lys Ser
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Pro Ala Pro Gly Leu Ala Ser Gly Asp Arg Pro Pro Ser Val Ser Ser
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Val His Ser Glu Gly Asp Cys Asn Arg Arg Thr Pro Leu Thr Asn Arg
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Val Trp Glu Asp Arg Pro Ser Ser Ala Gly Ser Thr Pro Phe Pro Tyr
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Asn Pro Leu Ile Met Arg Leu Gln Ala Gly Val Met Ala Ser Pro Pro
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Pro Pro Gly Leu Pro Ala Gly Ser Gly Pro Leu Ala Gly Pro His His
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Ser His Thr Asp Val Gly Leu Leu Glu Tyr Gln His His Pro Arg Asp
         35                  40                  45

Tyr Thr Ser His Leu Ser Pro Gly Ser Ile Ile Gln Pro Gln Arg Arg
     50                  55                  60

Arg Pro Ser Leu Leu Ser Glu Phe Gln Pro Gly Ser Glu Arg Ser Gln
 65                  70                  75                  80

Glu Leu His Leu Arg Pro Glu Ser Arg Thr Phe Leu Pro Glu Leu Gly
                 85                  90                  95

Lys Pro Asp Ile Glu Phe Thr Glu Ser Lys Arg Pro Arg Leu Glu Leu
            100                 105                 110

Leu Pro Asp Thr Leu Leu Arg Pro Ser Pro Leu Leu Ala Thr Gly Gln
        115                 120                 125

Pro Ser Gly Ser Glu Asp Leu Thr Lys Asp Arg Ser Leu Ala Gly Lys
    130                 135                 140

Leu Glu Pro Val Ser Pro Pro Ser Pro Pro His Ala Asp Pro Glu Leu
145                 150                 155                 160

Glu Leu Ala Pro Ser Arg Leu Ser Lys Glu Glu Leu Ile Gln Asn Met
                165                 170                 175

Asp Arg Val Asp Arg Glu Ile Thr Met Val Glu Gln Gln Ile Ser Lys
            180                 185                 190

Leu Lys Lys Lys Gln Gln Gln Leu Glu Glu Glu Ala Ala Lys Pro Pro
        195                 200                 205

Glu Pro Glu Lys Pro Val Ser Pro Pro Pro Ile Glu Ser Lys His Arg
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Ser Leu Val Gln Ile Ile Tyr Asp Glu Asn Arg Lys Lys Ala Glu Ala
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Ala His Arg Ile Leu Glu Gly Leu Gly Pro Gln Val Glu Leu Pro Leu
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Tyr Asn Gln Pro Ser Asp Thr Arg Gln Tyr His Glu Asn Ile Lys Ile
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Asn Gln Ala Met Arg Lys Lys Leu Ile Leu Tyr Phe Lys Arg Arg Asn
        275                 280                 285

His Ala Arg Lys Gln Trp Glu Gln Arg Phe Cys Gln Arg Tyr Asp Gln
    290                 295                 300

Leu Met Glu Ala Trp Glu Lys Lys Val Glu Arg Ile Glu Asn Asn Pro
305                 310                 315                 320

Arg Arg Arg Ala Lys Glu Ser Lys Val Arg Glu Tyr Tyr Glu Lys Gln
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Phe Pro Glu Ile Arg Lys Gln Arg Glu Leu Gln Glu Arg Met Gln Ser
            340                 345                 350

Arg Val Gly Gln Arg Gly Ser Gly Leu Ser Met Ser Ala Ala Arg Ser
        355                 360                 365

Glu His Glu Val Ser Glu Ile Ile Asp Gly Leu Ser Glu Gln Glu Asn
    370                 375                 380

Leu Glu Lys Gln Met Arg Gln Leu Ala Val Ile Pro Pro Met Leu Tyr
385                 390                 395                 400

Asp Ala Asp Gln Gln Arg Ile Lys Phe Ile Asn Met Asn Gly Leu Met
                405                 410                 415

Asp Asp Pro Met Lys Val Tyr Lys Asp Arg Gln Val Thr Asn Met Trp
            420                 425                 430

Ser Glu Gln Glu Arg Asp Thr Phe Arg Glu Lys Phe Met Gln His Pro
        435                 440                 445

Lys Asn Phe Gly Leu Ile Ala Ser Phe Leu Glu Arg Lys Thr Val Ala
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Glu Cys Val Leu Tyr Tyr Tyr Leu Thr Lys Lys Asn Glu Asn Tyr Lys
465                 470                 475                 480

Ser Leu Val Arg Arg Ser Tyr Arg Arg Arg Gly Lys Ser Gln Gln Gln
                485                 490                 495

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Met Ala Arg Ser Ser
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Gln Glu Glu Lys Glu Glu Lys Glu Lys Glu Lys Glu Ala Asp Lys Glu
        515                 520                 525

Glu Glu Lys Gln Asp Ala Glu Asn Glu Lys Glu Glu Leu Ser Lys Glu
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Lys Thr Asp Asp Thr Ser Gly Glu Asp Asn His Glu Lys Glu Ala Val
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Ala Ser Lys Gly Arg Lys Thr Ala Asn Ser Gln Gly Arg Arg Lys Gly
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Thr Pro Gln Gln Ser Ser Glu Leu Ala Ser Met Glu Met Asn Glu Ser
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Ser Arg Trp Thr Glu Glu Glu Met Glu Thr Ala Lys Lys Gly Leu Leu
    610                 615                 620

Glu His Gly Arg Asn Trp Ser Ala Ile Ala Arg Met Val Gly Ser Lys
625                 630                 635                 640

Thr Val Ser Gln Cys Lys Asn Phe Tyr Phe Asn Tyr Lys Lys Arg Gln
                645                 650                 655

Asn Leu Asp Glu Ile Leu Gln Gln His Lys Leu Lys Met Glu Lys Glu
            660                 665                 670

Arg Asn Ala Arg Arg Lys Lys Lys Lys Thr Pro Ala Ala Ala Ser Glu
        675                 680                 685

Glu Thr Ala Phe Pro Pro Ala Ala Glu Asp Glu Glu Met Glu Ala Ser
    690                 695                 700

Gly Ala Ser Ala Asn Glu Glu Glu Leu Ala Glu Glu Ala Glu Ala Ser
705                 710                 715                 720

Gln Ala Ser Gly Asn Glu Val Pro Arg Val Gly Glu Cys Ser Gly Pro
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Ala Ala Val Asn Asn Ser Ser Asp Thr Glu Ser Val Pro Ser Pro Arg
            740                 745                 750

Ser Glu Ala Met Lys Asp Thr Gly Pro Lys Pro Thr Gly Thr Glu Ala
        755                 760                 765

Leu Pro Ala Ala Thr Gln Pro Pro Val Pro Pro Pro Glu Glu Pro Ala
    770                 775                 780

Val Ala Pro Ala Glu Pro Ser Pro Val Pro Asp Ala Ser Gly Pro Pro
785                 790                 795                 800

Ser Pro Glu Pro Ser His His Leu Pro His Pro Arg Leu Leu Trp Thr
                805                 810                 815

Arg Met Asn Lys Lys Pro Arg Leu Leu Gln Leu Pro Arg Gln Arg Met
            820                 825                 830

Pro Arg Ser Arg Ser Leu Arg Pro Arg Arg Ser Met Trp Glu Lys Pro
        835                 840                 845

Glu Glu Pro Glu Ala Ser Glu Glu Pro Pro Glu Ser Val Lys Ser Asp
    850                 855                 860
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His Lys Glu Glu Thr Glu Glu Glu Pro Glu Asp Lys Ala Lys Gly Thr
865                 870                 875                 880

Glu Ala Ile Glu Thr Val Ser Glu Ala Pro Leu Lys Val Glu Glu Ala
                885                 890                 895

Gly Ser Lys Ala Ala Val Thr Lys Gly Ser Ser Ser Gly Ala Thr Gln
            900                 905                 910

Asp Ser Asp Phe Ser Ala Thr Cys Ser Ala Asp Glu Val Asp Glu Pro
        915                 920                 925

Glu Gly Gly Asp Lys Gly Arg Leu Leu Ser Pro Arg Pro Ser Leu Leu
    930                 935                 940

Thr Pro Ala Gly Asp Pro Arg Ala Ser Thr Ser Pro Gln Lys Pro Leu
945                 950                 955                 960

Asp Leu Lys Gln Leu Lys Gln Arg Ala Ala Ala Ile Pro Pro Ile Gln
                965                 970                 975

Val Thr Lys Val His Glu Pro Pro Arg Glu Asp Thr Val Pro Pro Lys
            980                 985                 990

Pro Val Pro Pro Val Pro Pro Pro Thr Gln His Leu Gln Pro Glu Gly
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Asp Val Ser Gln Gln Ser Gly Gly Ser Pro Arg Gly Lys Ser Arg Ser
   1010                1015                1020

Pro Val Pro Pro Ala Glu Lys Glu Ala Glu Lys Pro Ala Phe Phe Pro
1025                1030                1035                1040

Ala Phe Pro Thr Glu Gly Pro Lys Leu Pro Thr Glu Pro Pro Arg Trp
                1045                1050                1055

Ser Ser Gly Leu Pro Phe Pro Ile Pro Pro Arg Glu Val Ile Lys Thr
            1060                1065                1070

Ser Pro His Ala Ala Asp Pro Ser Ala Phe Ser Tyr Thr Pro Pro Gly
        1075                1080                1085

His Pro Leu Pro Leu Gly Leu His Asp Ser Ala Arg Pro Val Leu Pro
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Arg Pro Pro Ile Ser Asn Pro Pro Pro Leu Ile Ser Ser Ala Lys His
1105                1110                1115                1120

Pro Gly Val Leu Glu Arg Gln Leu Gly Ala Ile Ser Gln Gln Gly Met
                1125                1130                1135

Ser Val Gln Leu Arg Val Pro His Ser Glu His Ala Lys Ala Pro Met
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Gly Pro Leu Thr Met Gly Leu Pro Leu Ala Val Asp Pro Lys Lys Leu
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Gly Thr Ala Leu Gly Ser Ala Thr Ser Gly Ser Ile Thr Lys Gly Leu
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Pro Ser Thr Arg Ala Ala Asp Gly Pro Ser Tyr Arg Gly Ser Ile Thr
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His Gly Thr Pro Ala Asp Val Leu Tyr Lys Gly Thr Ile Ser Arg Ile
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Val Gly Glu Asp Ser Pro Ser Arg Leu Asp Arg Ala Arg Glu Asp Thr
            1220                1225                1230

Leu Pro Lys Gly His Val Ile Tyr Glu Gly Lys Lys Gly His Val Leu
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Ser Tyr Glu Gly Gly Met Ser Val Ser Gln Cys Ser Lys Glu Asp Gly
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Arg Ser Ser Ser Gly Pro Pro His Glu Thr Ala Ala Pro Lys Arg Thr
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Tyr Asp Met Met Glu Gly Arg Val Gly Arg Thr Val Thr Ser Ala Ser
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Ile Glu Gly Leu Met Gly Arg Ala Ile Pro Glu Gln His Ser Pro His
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Leu Lys Glu Gln His His Ile Arg Gly Ser Ile Thr Gln Gly Ile Pro
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Arg Ser Tyr Val Glu Ala Gln Glu Asp Tyr Leu Arg Arg Glu Ala Lys
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Leu Leu Lys Arg Glu Gly Thr Pro Pro Pro Pro Pro Pro Pro Arg Asp
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Leu Thr Glu Thr Tyr Lys Pro Arg Pro Leu Asp Pro Leu Gly Pro Leu
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Lys Leu Lys Pro Thr His Glu Gly Val Val Ala Thr Val Lys Glu Ala
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Gly Arg Ser Ile His Glu Ile Pro Arg Glu Glu Leu Arg Arg Thr Pro
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Glu Leu Pro Leu Ala Pro Arg Pro Leu Lys Glu Gly Ser Ile Thr Gln
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Gly Thr Pro Leu Lys Tyr Asp Ser Gly Ala Pro Ser Thr Gly Thr Lys
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Lys His Asp Val Arg Ser Ile Ile Gly Ser Pro Gly Arg Pro Phe Pro
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Ala Leu His Pro Leu Asp Ile Met Ala Asp Ala Arg Ala Leu Glu Arg
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Ala Cys Tyr Glu Glu Ser Leu Lys Ser Arg Ser Gly Thr Ser Ser Gly
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Gly Lys Pro Arg Gln Ser Pro Leu Thr Tyr Glu Asp His Gly Ala Pro
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Phe Thr Ser His Leu Pro Arg Gly Ser Pro Val Thr Thr Arg Glu Pro
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Thr Pro Arg Leu Gln Glu Gly Ser Leu Leu Ser Ser Lys Ala Ser Gln
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Asp Arg Lys Leu Thr Ser Thr Pro Arg Glu Ile Ala Lys Ser Pro His
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Ser Thr Val Pro Glu His His Pro His Pro Ile Ser Pro Tyr Glu His
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Leu Leu Arg Gly Val Thr Gly Val Asp Leu Tyr Arg Gly His Ile Pro
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Leu Ala Phe Asp Pro Thr Ser Ile Pro Arg Gly Ile Pro Leu Glu Ala
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Ala Ala Ala Ala Tyr Tyr Leu Pro Arg His Leu Ala Pro Ser Pro Thr
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Tyr Pro His Leu Tyr Pro Pro Tyr Leu Ile Arg Gly Tyr Pro Asp Thr
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Ala Ala Leu Glu Asn Arg Gln Thr Ile Ile Asn Asp Tyr Ile Thr Ser
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Gln Gln Met His His Asn Ala Ala Ser Ala Met Ala Gln Arg Ala Asp
1665                1670                1675                1680

Met Leu Arg Gly Leu Ser Pro Arg Glu Ser Ser Leu Ala Leu Asn Tyr
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Ala Ala Gly Pro Arg Gly Ile Ile Asp Leu Ser Gln Val Pro His Leu
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Pro Val Leu Val Pro Pro Thr Pro Gly Thr Pro Ala Thr Ala Ile Asp
       1715                1720                1725

Arg Leu Ala Tyr Leu Pro Thr Ala Pro Pro Pro Phe Ser Ser Arg His
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Ser Ser Ser Pro Leu Ser Pro Gly Gly Pro Thr His Leu Ala Lys Pro
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Thr Ala Thr Ser Ser Ser Glu Arg Glu Arg Glu Arg Glu Arg Glu Arg
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Asp Lys Ser Ile Leu Thr Ser Thr Thr Thr Val Glu His Ala Pro Ile
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Trp Arg Pro Gly Thr Glu Gln Ser Ser Gly Ala Gly Gly Ser Ser Arg
1795 1800 1805

Pro Ala Ser His Thr His Gln His Ser Pro Ile Ser Pro Arg Thr Gln
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Asp Ala Leu Gln Gln Arg Pro Ser Val Leu His Asn Thr Ser Met Lys
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Gly Val Val Thr Ser Val Glu Pro Gly Thr Pro Thr Val Leu Arg Trp
1845 1850 1855

Ala Arg Ser Thr Ser Thr Ser Ser Pro Val Arg Pro Ala Ala Thr Phe
1860 1865 1870

Pro Pro Ala Thr His Cys Pro Leu Gly Gly Thr Leu Glu Gly Val Tyr
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Pro Thr Leu Met Glu Pro Val Leu Leu Pro Lys Glu Thr Ser Arg Val
1890 1895 1900

Ala Arg Pro Glu Arg Ala Arg Val Asp Ala Gly His Ala Phe Leu Thr
1905 1910 1915 1920

Lys Pro Pro Gly Arg Glu Pro Ala Ser Ser Pro Ser Lys Ser Ser Glu
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Pro Arg Ser Leu Ala Pro Pro Ser Ser Ser His Thr Ala Ile Ala Arg
1940 1945 1950

Thr Pro Ala Lys Asn Leu Ala Pro His His Ala Ser Pro Asp Pro Pro
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Ala Pro Thr Ser Ala Ser Asp Leu His Arg Glu Lys Thr Gln Ser Lys
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Pro Phe Ser Ile Gln Glu Leu Glu Leu Arg Ser Leu Gly Tyr His Ser
1985 1990 1995 2000

Gly Ala Gly Tyr Ser Pro Asp Gly Val Glu Pro Ile Ser Pro Val Ser
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Ser Pro Ser Leu Thr His Asp Lys Gly Leu Ser Lys Pro Leu Glu Glu
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Pro Met Lys Leu Ser Ala Glu Ala Ala His Leu Pro His Leu Arg Pro
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Leu Pro Glu Ser Gln Pro Ser Ser Ser Pro Leu Leu Gln Thr Ala Pro
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Gly Ile Lys Gly His Gln Arg Val Val Thr Leu Ala Gln His Ile Ser
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Val Leu Asp Leu Arg Arg Pro Pro Ser Asp Leu Tyr Leu Pro Pro Pro
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Pro Gly Gly Gly Gly Lys Ala Lys Val Ser Gly Arg Pro Ser Ser Arg
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Ala Ser Pro Pro Pro Pro Gly Leu Ala Ala Gly Ser Gly Pro Leu Ala
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Ser His Thr Pro Leu Tyr Asn Gln Pro Ser Asp Thr Arg Gln Tyr His
         35                  40                  45

Glu Asn Ile Lys Ile Asn Gln Ala Met Arg Lys Lys Leu Ile Leu Tyr
     50                  55                  60

Phe Lys Arg Arg Asn His Ala Arg Lys Gln Trp Glu Gln Arg Phe Cys
 65                  70                  75                  80

Gln Arg Tyr Asp Gln Leu Met Glu Ala Trp Glu Lys Lys Val Glu Arg
                 85                  90                  95

Ile Glu Asn Asn Pro Arg Arg Arg Ala Lys Glu Ser Lys Val Arg Glu
            100                 105                 110

Tyr Tyr Glu Lys Gln Phe Pro Glu Ile Arg Lys Gln Arg Glu Leu Gln
        115                 120                 125

Glu Arg Met Gln Ser Arg Val Gly Gln Arg Gly Ser Gly Leu Ser Met
    130                 135                 140

Ser Ala Ala Arg Ser Glu His Glu Val Ser Glu Ile Ile Asp Gly Leu
145                 150                 155                 160

Ser Glu Gln Glu Asn Leu Glu Lys Gln Met Arg Gln Leu Ala Val Ile
                165                 170                 175

Pro Pro Met Leu Tyr Asp Ala Asp Gln Gln Arg Ile Lys Phe Ile Asn
            180                 185                 190

Met Asn Gly Leu Met Asp Asp Pro Met Lys Val Tyr Lys Asp Arg Gln
        195                 200                 205

Val Thr Asn Met Trp Ser Glu Gln Glu Arg Asp Thr Phe Arg Glu Lys
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Phe Met Gln His Pro Lys Asn Phe Gly Leu Ile Ala Ser Phe Leu Glu
225                 230                 235                 240
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Arg Lys Thr Val Ala Glu Cys Val Leu Tyr Tyr Tyr Leu Thr Lys Lys
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Asn Glu Asn Tyr Lys Ser Leu Val Arg Arg Ser Tyr Arg Arg Arg Gly
            260                 265                 270

Lys Ser Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
        275                 280                 285

Met Ala Arg Ser Ser Gln Glu Glu Lys Glu Glu Lys Glu Lys Glu Lys
    290                 295                 300

Glu Ala Asp Lys Glu Glu Glu Lys Gln Asp Ala Glu Asn Glu Lys Glu
305                 310                 315                 320

Glu Leu Ser Lys Glu Lys Thr Asp Asp Thr Ser Gly Glu Asp Asn Asp
                325                 330                 335

Glu Lys Glu Ala Val Ala Ser Lys Gly Arg Lys Thr Ala Asn Ser Gln
            340                 345                 350

Gly Arg Arg Lys Gly Arg Ile Thr Arg Ser Met Ala Asn Glu Ala Asn
        355                 360                 365

His Glu Glu Thr Ala Thr Pro Gln Gln Ser Ser Glu Leu Ala Ser Met
    370                 375                 380

Glu Met Asn Glu Ser Ser Arg Trp Thr Glu Glu Glu Met Glu Thr Ala
385                 390                 395                 400

Lys Lys Gly Leu Leu Glu His Gly Arg Asn Trp Ser Ala Ile Ala Arg
                405                 410                 415

Met Val Gly Ser Lys Thr Val Ser Gln Cys Lys Asn Phe Tyr Phe Asn
            420                 425                 430

Tyr Lys Lys Arg Gln Asn Leu Asp Glu Ile Leu Gln Gln His Lys Leu
        435                 440                 445

Lys Met Glu Lys Glu Arg Asn Ala Arg Arg Lys Lys Lys Lys Thr Pro
    450                 455                 460

Ala Ala Ala Ser Glu Glu Thr Ala Phe Pro Pro Ala Ala Glu Asp Glu
465                 470                 475                 480

Glu Met Glu Ala Ser Gly Ala Ser Ala Asn Glu Glu Glu Leu Ala Glu
                485                 490                 495

Glu Ala Glu Ala Ser Gln Ala Ser Gly Asn Glu Val Pro Arg Val Gly
            500                 505                 510

Glu Cys Ser Gly Pro Ala Ala Val Asn Asn Ser Ser Asp Thr Glu Ser
        515                 520                 525

Val Pro Ser Pro Arg Ser Glu Ala Thr Lys Asp Thr Gly Pro Lys Pro
    530                 535                 540
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Thr Gly Thr Glu Ala Leu Pro Ala Ala Thr Gln Pro Pro Val Pro Pro
545                 550                 555                 560

Pro Glu Glu Pro Ala Val Ala Pro Ala Glu Pro Ser Pro Val Pro Asp
                565                 570                 575

Ala Ser Gly Pro Pro Ser Pro Glu Pro Ser His His Leu Pro His Pro
            580                 585                 590

Arg Leu Leu Trp Thr Arg Met Asn Lys Lys Pro Arg Leu Leu Gln Leu
        595                 600                 605

Pro Arg Gln Arg Met Pro Arg Ser Arg Ser Leu Arg Pro Arg Arg Ser
    610                 615                 620

Met Trp Glu Lys Pro Glu Glu Pro Glu Ala Ser Glu Lys Pro Pro Lys
625                 630                 635                 640

Ser Val Lys Ser Asp His Lys Lys Glu Thr Glu Glu Glu Pro Glu Asp
                645                 650                 655

Lys Ala Lys Gly Thr Glu Ala Ile Glu Thr Val Ser Glu Ala Pro Leu
            660                 665                 670

Lys Val Glu Lys Ala Gly Ser Lys Ala Ala Val Thr Lys Gly Ser Ser
        675                 680                 685

Ser Gly Ala Thr Gln Asp Ser Asp Ser Ser Ala Thr Cys Ser Ala Asp
    690                 695                 700

Glu Val Asp Glu Pro Glu Gly Gly Asp Lys Gly Arg Leu Leu Ser Pro
705                 710                 715                 720

Arg Pro Ser Leu Leu Thr Pro Ala Gly Asp Pro Arg Ala Ser Thr Ser
                725                 730                 735

Pro Gln Lys Pro Leu Asp Leu Lys Gln Leu Lys Gln Arg Ala Ala Ala
            740                 745                 750

Ile Pro Pro Ile Val Thr Lys Val His Glu Pro Pro Arg Glu Asp Thr
        755                 760                 765

Val Pro Pro Lys Pro Val Pro Pro Val Pro Pro Pro Thr Gln His Leu
    770                 775                 780

Gln Pro Glu Gly Asp Val Ser Gln Gln Ser Gly Gly Ser Pro Arg Gly
785                 790                 795                 800

Lys Ser Arg Ser Pro Val Pro Pro Ala Glu Lys Glu Ala Glu Lys Pro
                805                 810                 815

Ala Phe Phe Pro Ala Phe Pro Thr Glu Gly Pro Lys Leu Pro Thr Glu
            820                 825                 830

Pro Pro Arg Trp Ser Ser Gly Leu Pro Phe Pro Ile Pro Pro Arg Glu
        835                 840                 845
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Val Ile Lys Thr Ser Pro His Ala Ala Asp Pro Ser Ala Phe Ser Tyr
    850                 855                 860

Thr Pro Pro Gly His Pro Leu Pro Leu Gly Leu His Asp Ser Ala Arg
865                 870                 875                 880

Pro Val Leu Pro Arg Pro Pro Ile Ser Asn Pro Pro Pro Leu Ile Ser
                885                 890                 895

Ser Ala Lys His Pro Gly Val Leu Glu Arg Gln Leu Gly Ala Ile Ser
            900                 905                 910

Gln Gln Gly Met Ser Val Gln Leu Arg Val Pro His Ser Glu His Ala
        915                 920                 925

Lys Ala Pro Met Gly Pro Leu Thr Met Gly Leu Pro Leu Ala Val Asp
    930                 935                 940

Pro Lys Lys Leu Gly Thr Ala Leu Gly Ser Ala Thr Ser Gly Ser Ile
945                 950                 955                 960

Thr Lys Gly Leu Pro Ser Thr Arg Ala Ala Asp Gly Pro Ser Tyr Arg
                965                 970                 975

Gly Ser Ile Thr His Gly Thr Pro Ala Asp Val Leu Tyr Lys Gly Thr
            980                 985                 990

Ile Ser Arg Ile Val Gly Glu Asp Ser Pro Ser Arg Leu Asp Arg Ala
        995                1000                1005

Arg Glu Asp Thr Leu Pro Lys Gly His Val Ile Tyr Glu Gly Lys Lys
   1010                1015                1020

Gly His Val Leu Ser Tyr Glu Gly Gly Met Ser Val Ser Gln Cys Ser
1025                1030                1035                1040

Lys Glu Asp Gly Arg Ser Ser Ser Gly Pro Pro His Glu Thr Ala Ala
                1045                1050                1055

Pro Lys Arg Thr Tyr Asp Met Met Glu Gly Arg Val Gly Arg Thr Val
            1060                1065                1070

Thr Ser Ala Ser Ile Glu Gly Leu Met Gly Arg Ala Ile Pro Glu Gln
        1075                1080                1085

His Ser Pro His Leu Lys Glu Gln His His Ile Arg Gly Ser Ile Thr
   1090                1095                1100

Gln Gly Ile Pro Arg Ser Tyr Val Glu Ala Gln Glu Asp Tyr Leu Arg
1105                1110                1115                1120

Arg Glu Ala Lys Leu Leu Lys Arg Glu Gly Thr Pro Pro Pro Pro Pro
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Pro Pro Arg Asp Leu Thr Glu Thr Tyr Lys Pro Arg Pro Leu Asp Pro
            1140                1145                1150
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Leu Gly Pro Leu Lys Leu Lys Pro Thr His Glu Gly Val Val Ala Thr
       1155                1160                1165

Val Lys Glu Ala Gly Arg Ser Ile His Glu Ile Pro Arg Glu Glu Leu
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Arg Arg Thr Pro Glu Leu Pro Leu Ala Pro Arg Pro Leu Lys Glu Gly
1185                1190                1195                1200

Ser Ile Thr Gln Gly Thr Pro Leu Lys Tyr Asp Ser Gly Ala Pro Ser
               1205                1210                1215

Thr Gly Thr Lys Lys His Asp Val Arg Ser Ile Ile Gly Ser Pro Gly
           1220                1225                1230

Arg Pro Phe Pro Ala Leu His Pro Leu Asp Ile Met Ala Asp Ala Arg
       1235                1240                1245

Ala Leu Glu Arg Ala Cys Tyr Glu Glu Ser Leu Lys Ser Arg Ser Gly
   1250                1255                1260

Thr Ser Ser Gly Ala Gly Gly Ser Ile Thr Arg Gly Ala Pro Val Val
1265                1270                1275                1280

Val Pro Glu Leu Gly Lys Pro Arg Gln Ser Pro Leu Thr Tyr Glu Asp
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His Gly Ala Pro Phe Thr Ser His Leu Pro Arg Gly Ser Pro Val Thr
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Thr Arg Glu Pro Thr Pro Arg Leu Gln Glu Gly Ser Leu Leu Ser Ser
       1315                1320                1325

Lys Ala Ser Gln Asp Arg Lys Leu Thr Ser Thr Pro Arg Glu Ile Ala
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Lys Ser Pro His Ser Thr Val Pro Glu His His Pro His Pro Ile Ser
1345                1350                1355                1360

Pro Tyr Glu His Leu Leu Arg Gly Val Thr Gly Val Asp Leu Tyr Arg
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Gly His Ile Pro Leu Ala Phe Asp Pro Thr Ser Ile Pro Arg Gly Ile
           1380                1385                1390

Pro Leu Glu Ala Ala Ala Ala Ala Tyr Tyr Leu Pro Arg His Leu Ala
       1395                1400                1405

Pro Ser Pro Thr Tyr Pro His Leu Tyr Pro Pro Tyr Leu Ile Arg Gly
   1410                1415                1420

Tyr Pro Asp Thr Ala Ala Leu Glu Asn Arg Gln Thr Ile Ile Asn Asp
1425                1430                1435                1440

Tyr Ile Thr Ser Gln Gln Met His His Asn Ala Ala Ser Ala Met Ala
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Gln Arg Ala Asp Met Leu Arg Gly Leu Ser Pro Arg Glu Ser Ser Leu
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Ala Leu Asn Tyr Ala Ala Gly Pro Arg Gly Ile Ile Asp Leu Ser Gln
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Val Pro His Leu Pro Val Leu Val Pro Pro Thr Pro Gly Thr Pro Ala
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Thr Ala Ile Asp Arg Leu Ala Tyr Leu Pro Thr Ala Pro Pro Pro Phe
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Ser Ser Arg His Ser Ser Ser Pro Leu Ser Pro Gly Gly Pro Thr His
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Leu Ala Lys Pro Thr Ala Thr Ser Ser Ser Glu Arg Glu Arg Glu Arg
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Glu Arg Glu Arg Asp Lys Ser Ile Leu Thr Ser Thr Thr Thr Val Glu
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His Ala Pro Ile Trp Arg Pro Gly Thr Glu Gln Ser Ser Gly Ala Gly
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Gly Ser Ser Arg Pro Ala Ser His Thr His Gln His Ser Pro Ile Ser
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Pro Arg Thr Gln Asp Ala Leu Gln Gln Arg Pro Ser Val Leu His Asn
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Thr Ser Met Lys Gly Val Val Thr Ser Val Glu Pro Gly Thr Pro Thr
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Val Leu Arg Trp Ala Arg Ser Thr Ser Thr Ser Ser Pro Val Arg Pro
       1635                1640                1645

Ala Ala Thr Phe Pro Pro Ala Thr His Cys Pro Leu Gly Gly Thr Leu
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Glu Gly Val Tyr Pro Thr Leu Met Glu Pro Val Leu Leu Pro Lys Glu
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Thr Ser Arg Val Ala Arg Pro Glu Arg Ala Arg Val Asp Ala Gly His
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Ala Phe Leu Thr Lys Pro Pro Gly Arg Glu Pro Ala Ser Ser Pro Ser
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Lys Ser Ser Glu Pro Arg Ser Leu Ala Pro Pro Ser Ser Ser His Thr
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Ala Ile Ala Arg Thr Pro Ala Lys Asn Leu Ala Pro His His Ala Ser
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Pro Asp Pro Pro Ala Pro Thr Ser Ala Ser Asp Leu His Arg Glu Lys
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Thr Gln Ser Lys Pro Phe Ser Ile Gln Glu Leu Glu Leu Arg Ser Leu
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Gly Tyr His Ser Gly Ala Gly Tyr Ser Pro Asp Gly Val Glu Pro Ile
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Ser Pro Val Ser Ser Pro Ser Leu Thr His Asp Lys Gly Leu Ser Lys
1795 1800 1805

Pro Leu Glu Glu Leu Glu Lys Ser His Leu Glu Gly Glu Leu Arg His
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Lys Gln Pro Gly Pro Met Lys Leu Ser Ala Glu Ala Ala His Leu Pro
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His Leu Arg Pro Leu Pro Glu Ser Gln Pro Ser Ser Ser Pro Leu Leu
1845 1850 1855

Gln Thr Ala Pro Gly Ile Lys Gly His Gln Arg Val Val Thr Leu Ala
1860 1865 1870

Gln His Ile Ser Glu Val Ile Thr Gln Asp Tyr Thr Arg His His Pro
1875 1880 1885

Gln Gln Leu Ser Gly Pro Leu Pro Ala Pro Leu Tyr Ser Phe Pro Gly
1890 1895 1900

Ala Ser Cys Pro Val Leu Asp Leu Arg Arg Pro Pro Ser Asp Leu Tyr
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Leu Pro Pro Pro Asp His Gly Thr Pro Ala Arg Gly Ser Pro His Ser
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Glu Gly Gly Lys Arg Ser Pro Glu Pro Ser Lys Thr Ser Val Leu Gly
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Ser Ser Glu Asp Ala Ile Glu Pro Val Ser Pro Pro Glu Gly Met Thr
1955 1960 1965

Glu Pro Gly His Ala Arg Ser Thr Ala Tyr Pro Leu Leu Tyr Arg Asp
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1985 1990 1995 2000

Ser Gln Pro Pro Thr Phe Phe Ser Lys Leu Thr Glu Ser Asn Ser Ala
2005 2010 2015

Met Val Lys Ser Lys Lys Gln Glu Ile Asn Lys Lys Leu Asn Thr His
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Phe Asn Met Pro Ala Ile Thr Gly Ala Gly Leu Met Thr Cys Arg Ser
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Gln Ala Val Gln Glu His Ala Ser Thr Asn Met Gly Leu Glu Ala Ile
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Ile Arg Lys Ala Leu Met Gly Lys Tyr Asp Gln Trp Glu Glu Pro Pro
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Pro Leu Gly Ala Asn Ala Phe Asn Pro Leu Asn Ala Ser Ala Ser Leu
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Pro Ala Ala Ala Met Pro Ile Thr Thr Ala Asp Gly Arg Ser Asp His
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Ala Leu Thr Ser Pro Gly Gly Gly Gly Lys Ala Lys Val Ser Gly Arg
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Pro Ser Ser Arg Lys Ala Lys Ser Pro Ala Pro Gly Leu Ala Ser Gly
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Ala Gly Val Met Ala Ser Pro Pro Pro Pro Gly Leu Ala Ala Gly Ser
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Arg His Gln Gln Glu Phe Ala Val Pro Asp Tyr Arg Ser Ser His Leu
         35                  40                  45

Glu Val Ser Gln Ala Ser Gln Leu Leu Gln Gln Gln Gln Gln Gln Gln
     50                  55                  60

Leu Arg Arg Arg Pro Ser Leu Leu Ser Glu Phe His Pro Gly Ser Asp
 65                  70                  75                  80

Arg Pro Gln Glu Arg Arg Thr Ser Tyr Glu Pro Phe His Pro Gly Pro
                 85                  90                  95

Ser Pro Val Asp His Asp Ser Leu Glu Ser Lys Arg Pro Arg Leu Glu
            100                 105                 110

Gln Val Ser Asp Ser His Phe Gln Arg Val Ser Ala Ala Val Leu Pro
        115                 120                 125

Leu Val His Pro Leu Pro Glu Gly Leu Arg Ala Ser Ala Asp Ala Lys
    130                 135                 140

Lys Asp Pro Ala Phe Gly Gly Lys His Glu Ala Pro Ser Ser Pro Ile
145                 150                 155                 160

Ser Gly Gln Pro Cys Gly Asp Asp Gln Asn Ala Ser Pro Ser Lys Leu
                165                 170                 175

Ser Lys Glu Glu Leu Ile Gln Ser Met Asp Arg Val Asp Arg Glu Ile
            180                 185                 190

Ala Lys Val Glu Gln Gln Ile Leu Lys Leu Lys Lys Lys Gln Gln Gln
        195                 200                 205

Leu Glu Glu Glu Ala Ala Lys Pro Pro Glu Pro Glu Lys Pro Val Ser
    210                 215                 220

Pro Pro Pro Val Glu Gln Lys His Arg Ser Ile Val Gln Ile Ile Tyr
225                 230                 235                 240

Asp Glu Asn Arg Lys Lys Ala Glu Glu Ala His Lys Ile Phe Glu Gly
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Leu Gly Pro Lys Val Glu Leu Pro Leu Tyr Asn Gln Pro Ser Asp Thr
            260                 265                 270

Lys Val Tyr His Glu Asn Ile Lys Thr Asn Gln Val Met Arg Lys Lys
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Leu Ile Leu Phe Phe Lys Arg Arg Asn His Ala Arg Lys Gln Arg Glu
    290                 295                 300

Gln Lys Ile Cys Gln Arg Tyr Asp Gln Leu Met Glu Ala Trp Glu Lys
305                 310                 315                 320

Lys Val Asp Arg Ile Glu Asn Asn Pro Arg Arg Lys Ala Lys Glu Ser
                325                 330                 335

Lys Thr Arg Glu Tyr Tyr Glu Lys Gln Phe Pro Glu Ile Arg Lys Gln
            340                 345                 350

Arg Glu Gln Gln Glu Arg Phe Gln Arg Val Gly Gln Arg Gly Ala Gly
        355                 360                 365

Leu Ser Ala Thr Ile Ala Arg Ser Glu His Glu Ile Ser Glu Ile Ile
    370                 375                 380

Asp Gly Leu Ser Glu Gln Glu Asn Asn Glu Lys Gln Met Arg Gln Leu
385                 390                 395                 400

Ser Val Ile Pro Pro Met Met Phe Asp Ala Glu Gln Arg Arg Val Lys
                405                 410                 415

Phe Ile Asn Met Asn Gly Leu Met Glu Asp Pro Met Lys Val Tyr Lys
            420                 425                 430

Asp Arg Gln Phe Met Asn Val Trp Thr Asp His Glu Lys Glu Ile Phe
        435                 440                 445

Lys Asp Lys Phe Ile Gln His Pro Lys Asn Phe Gly Leu Ile Ala Ser
    450                 455                 460

Tyr Leu Glu Arg Lys Ser Val Pro Asp Cys Val Leu Tyr Tyr Tyr Leu
465                 470                 475                 480

Thr Lys Lys Asn Glu Asn Tyr Lys Ala Leu Val Arg Arg Asn Tyr Gly
                485                 490                 495

Lys Arg Arg Gly Arg Asn Gln Gln Ile Ala Arg Pro Ser Gln Glu Glu
            500                 505                 510

Lys Val Glu Glu Lys Glu Glu Asp Lys Ala Glu Lys Thr Glu Lys Lys
        515                 520                 525

Glu Glu Glu Lys Lys Asp Glu Glu Glu Lys Asp Glu Lys Glu Asp Ser
    530                 535                 540

Lys Glu Asn Thr Lys Glu Lys Asp Lys Ile Asp Gly Thr Ala Glu Glu
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Thr Glu Glu Arg Glu Gln Ala Thr Pro Arg Gly Arg Lys Thr Ala Asn
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Ser Gln Gly Arg Arg Lys Gly Arg Ile Thr Arg Ser Met Thr Asn Glu
            580                 585                 590

Ala Ala Ala Ala Ser Ala Ala Ala Ala Ala Ala Thr Glu Glu Pro Pro
        595                 600                 605

Pro Pro Leu Pro Pro Pro Pro Glu Pro Ile Ser Thr Glu Pro Val Glu
    610                 615                 620

Thr Ser Arg Trp Thr Glu Glu Glu Met Glu Val Ala Lys Lys Gly Leu
625                 630                 635                 640

Val Glu His Gly Arg Asn Trp Ala Ala Ile Ala Lys Met Val Gly Thr
                645                 650                 655

Lys Ser Glu Ala Gln Cys Lys Asn Phe Tyr Phe Asn Tyr Lys Arg Arg
            660                 665                 670

His Asn Leu Asp Asn Leu Leu Gln Gln His Lys Gln Lys Thr Ser Arg
        675                 680                 685

Lys Pro Arg Glu Glu Arg Asp Val Ser Gln Cys Glu Ser Val Ala Ser
    690                 695                 700

Thr Val Ser Ala Gln Glu Asp Glu Asp Ile Glu Ala Ser Asn Glu Glu
705                 710                 715                 720

Glu Asn Pro Glu Asp Ser Glu Val Glu Ala Val Lys Pro Ser Glu Asp
                725                 730                 735

Ser Pro Glu Asn Ala Thr Ser Arg Gly Asn Thr Glu Pro Ala Val Glu
            740                 745                 750

Leu Glu Pro Thr Thr Glu Thr Ala Pro Ser Thr Ser Pro Ser Leu Ala
        755                 760                 765

Val Pro Ser Thr Lys Pro Ala Glu Asp Glu Ser Val Glu Thr Gln Val
    770                 775                 780

Asn Asp Ser Ile Ser Ala Glu Thr Ala Glu Gln Met Asp Val Asp Gln
785                 790                 795                 800

Gln Glu His Ser Ala Glu Glu Gly Ser Val Cys Asp Pro Pro Pro Ala
                805                 810                 815

Thr Lys Ala Asp Ser Val Asp Val Glu Val Arg Val Pro Glu Asn His
            820                 825                 830

Ala Ser Lys Val Glu Gly Asp Asn Thr Lys Glu Arg Asp Leu Asp Arg
        835                 840                 845

Ala Ser Glu Lys Val Glu Pro Arg Asp Glu Asp Leu Val Val Ala Gln
    850                 855                 860
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Gln Ile Asn Ala Gln Arg Pro Glu Pro Gln Ser Asp Asn Asp Ser Ser
865                 870                 875                 880

Ala Thr Cys Ser Ala Asp Glu Asp Val Asp Gly Glu Pro Glu Arg Gln
                885                 890                 895

Arg Met Phe Pro Met Asp Ser Lys Pro Ser Leu Leu Asn Pro Thr Gly
            900                 905                 910

Ser Ile Leu Val Ser Ser Pro Leu Lys Pro Asn Pro Leu Asp Leu Pro
        915                 920                 925

Gln Leu Gln His Arg Ala Ala Val Ile Pro Pro Met Val Ser Cys Thr
    930                 935                 940

Pro Cys Asn Ile Pro Ile Gly Thr Pro Val Ser Gly Tyr Ala Leu Tyr
945                 950                 955                 960

Gln Arg His Ile Lys Ala Met His Glu Ser Ala Leu Leu Glu Glu Gln
                965                 970                 975

Arg Gln Arg Gln Glu Gln Ile Asp Leu Glu Cys Arg Ser Ser Thr Ser
            980                 985                 990

Pro Cys Gly Thr Ser Lys Ser Pro Asn Arg Glu Trp Glu Val Leu Gln
        995                1000                1005

Pro Ala Pro His Gln Leu Ile Thr Asn Leu Pro Glu Gly Val Arg Leu
   1010                1015                1020

Pro Thr Thr Arg Pro Thr Arg Pro Pro Pro Pro Leu Ile Pro Ser Ser
1025                1030                1035                1040

Lys Thr Thr Val Ala Ser Glu Lys Pro Ser Phe Ile Met Gly Gly Ser
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Ile Ser Gln Gly Thr Pro Gly Thr Tyr Leu Thr Ser His Asn Gln Ala
            1060                1065                1070

Ser Tyr Thr Gln Glu Thr Pro Lys Pro Ser Val Gly Ser Ile Ser Leu
        1075                1080                1085

Gly Leu Pro Arg Gln Gln Glu Ser Ala Lys Ser Ala Thr Leu Pro Tyr
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Ile Lys Gln Glu Glu Phe Ser Pro Arg Ser Gln Asn Ser Gln Pro Glu
1105                1110                1115                1120

Gly Leu Leu Val Arg Ala Gln His Glu Gly Val Val Arg Gly Thr Ala
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Gly Ala Ile Gln Glu Gly Ser Ile Thr Arg Gly Thr Pro Thr Ser Lys
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Ile Ser Val Glu Ser Ile Pro Ser Leu Arg Gly Ser Ile Thr Gln Gly
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Thr Pro Ala Leu Pro Gln Thr Gly Ile Pro Thr Glu Ala Leu Val Lys
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Gly Ser Ile Ser Arg Met Pro Ile Glu Asp Ser Ser Pro Glu Lys Gly
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Arg Glu Glu Ala Ala Ser Lys Gly His Val Ile Tyr Glu Gly Lys Ser
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Gly His Ile Leu Ser Tyr Asp Asn Ile Lys Asn Ala Arg Glu Gly Thr
           1220                1225                1230

Arg Ser Pro Arg Thr Ala His Glu Ile Ser Leu Lys Arg Ser Tyr Glu
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Ser Val Glu Gly Asn Ile Lys Gln Gly Met Ser Met Arg Glu Ser Pro
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Val Ser Ala Pro Leu Glu Gly Leu Ile Cys Arg Ala Leu Pro Arg Gly
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Ser Pro His Ser Asp Leu Lys Glu Arg Thr Val Leu Ser Gly Ser Ile
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Met Gln Gly Thr Pro Arg Ala Thr Thr Glu Ser Phe Glu Asp Gly Leu
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Lys Tyr Pro Lys Gln Ile Lys Arg Glu Ser Pro Pro Ile Arg Ala Phe
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Glu Gly Ala Ile Thr Lys Gly Lys Pro Tyr Asp Gly Ile Thr Thr Ile
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Lys Glu Met Gly Arg Ser Ile His Glu Ile Pro Arg Gln Asp Ile Leu
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Thr Gln Glu Ser Arg Lys Thr Pro Glu Val Val Gln Ser Thr Arg Pro
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Ile Ile Glu Gly Ser Ile Ser Gln Gly Thr Pro Ile Lys Phe Asp Asn
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Asn Ser Gly Gln Ser Ala Ile Lys His Asn Val Lys Ser Leu Ile Thr
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Gly Pro Ser Lys Leu Ser Arg Gly Met Pro Pro Leu Glu Ile Val Pro
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Glu Asn Ile Lys Val Val Glu Arg Gly Lys Tyr Glu Asp Val Lys Ala
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Gly Glu Thr Val Arg Ser Arg His Thr Ser Val Val Ser Ser Gly Pro
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Ser Val Leu Arg Ser Thr Leu His Glu Ala Pro Lys Ala Gln Leu Ser
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Pro Gly Ile Tyr Asp Asp Thr Ser Ala Arg Arg Thr Pro Val Ser Tyr
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Val Thr Ile Pro Pro Asn Lys Ser Thr Asn His Glu Arg Lys Ser Thr
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Leu Thr Pro Thr Gln Arg Glu Ser Ile Pro Ala Lys Ser Pro Val Pro
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Gly Val Asp Pro Val Val Ser His Ser Pro Phe Asp Pro His His Arg
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Gly Ser Thr Ala Gly Glu Val Tyr Trp Ser His Leu Pro Thr Gln Leu
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Asp Pro Ala Met Pro Phe His Arg Ala Leu Asp Pro Ala Ala Ala Ala
   1570                1575                1580

Tyr Leu Phe Gln Arg Gln Leu Ser Pro Thr Pro Gly Tyr Pro Ser Gln
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Tyr Gln Leu Tyr Ala Met Glu Asn Thr Arg Gln Thr Ile Leu Asn Asp
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Tyr Ile Thr Ser Gln Gln Met Gln Val Asn Leu Arg Pro Asp Val Ala
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Arg Gly Leu Ser Pro Arg Glu Gln Pro Leu Gly Leu Pro Tyr Pro Ala
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Thr Arg Gly Ile Ile Asp Leu Thr Asn Met Pro Pro Thr Ile Leu Val
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Pro His Pro Gly Gly Thr Ser Thr Pro Pro Met Asp Arg Ile Thr Tyr
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Ile Pro Gly Thr Gln Ile Thr Phe Pro Pro Arg Pro Tyr Asn Ser Ala
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Ser Met Ser Pro Gly His Pro Thr His Leu Ala Ala Ala Ala Ser Ala
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Glu Arg Glu Arg Glu Arg Glu Arg Glu Lys Glu Arg Glu Arg Glu Arg
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Ile Ala Ala Ala Ser Ser Asp Leu Tyr Leu Arg Pro Gly Ser Glu Gln
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Pro Gly Arg Pro Gly Ser His Gly Tyr Val Arg Ser Pro Ser Pro Ser
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Val Arg Thr Gln Glu Thr Met Leu Gln Gln Arg Pro Ser Val Phe Gln
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1810 1815 1820

Val Asp Ala Ala Ala Ser Ala Pro Gln Met Asp Val Ser Lys Thr Lys
1825 1830 1835 1840

Glu Ser Lys His Glu Ala Ala Arg Leu Glu Glu Asn Leu Arg Ser Arg
1845 1850 1855

Ser Ala Ala Val Ser Glu Gln Gln Gln Leu Glu Gln Lys Thr Leu Glu
1860 1865 1870

Val Glu Lys Arg Ser Val Gln Cys Leu Tyr Thr Ser Ser Ala Phe Pro
1875 1880 1885

Ser Gly Lys Pro Gln Pro His Ser Ser Val Val Tyr Ser Glu Ala Gly
1890 1895 1900

Lys Asp Lys Gly Pro Pro Pro Lys Ser Arg Tyr Glu Glu Glu Leu Arg
1905 1910 1915 1920

Thr Arg Gly Lys Thr Thr Ile Thr Ala Ala Asn Phe Ile Asp Val Ile
1925 1930 1935

Ile Thr Arg Gln Ile Ala Ser Asp Lys Asp Ala Arg Glu Arg Gly Ser
1940 1945 1950

Gln Ser Ser Asp Ser Ser Ser Ser Leu Ser Ser His Arg Tyr Glu Thr
1955 1960 1965

Pro Ser Asp Ala Ile Glu Val Ile Ser Pro Ala Ser Ser Pro Ala Pro
1970 1975 1980

Pro Gln Glu Lys Leu Gln Thr Tyr Gln Pro Glu Val Val Lys Ala Asn
1985 1990 1995 2000

Gln Ala Glu Asn Asp Pro Thr Arg Gln Tyr Glu Gly Pro Leu His His
2005 2010 2015

Tyr Arg Pro Gln Gln Glu Ser Pro Ser Pro Gln Gln Gln Leu Pro Pro
2020 2025 2030

Ser Ser Gln Ala Glu Gly Met Gly Gln Val Pro Arg Thr His Arg Leu
2035 2040 2045

Ile Thr Leu Ala Asp His Ile Cys Gln Ile Ile Thr Gln Asp Phe Ala
2050 2055 2060

Arg Asn Gln Val Ser Ser Gln Thr Pro Gln Gln Pro Pro Thr Ser Thr
2065 2070 2075 2080

```
Phe Gln Asn Ser Pro Ser Ala Leu Val Ser Thr Pro Val Arg Thr Lys
                2085                2090                2095

Thr Ser Asn Arg Tyr Ser Pro Glu Ser Gln Ala Gln Ser Val His His
            2100                2105                2110

Gln Arg Pro Gly Ser Arg Val Ser Pro Glu Asn Leu Val Asp Lys Ser
        2115                2120                2125

Arg Gly Ser Arg Pro Gly Lys Ser Pro Glu Arg Ser His Val Ser Ser
    2130                2135                2140

Glu Pro Tyr Glu Pro Ile Ser Pro Pro Gln Val Pro Val Val His Glu
2145                2150                2155                2160

Lys Gln Asp Ser Leu Leu Leu Leu Ser Gln Arg Gly Ala Glu Pro Ala
                2165                2170                2175

Glu Gln Arg Asn Asp Ala Arg Ser Pro Gly Ser Ile Ser Tyr Leu Pro
            2180                2185                2190

Ser Phe Phe Thr Lys Leu Glu Asn Thr Ser Pro Met Val Lys Ser Lys
        2195                2200                2205

Lys Gln Glu Ile Phe Arg Lys Leu Asn Ser Ser Gly Gly Gly Asp Ser
    2210                2215                2220

Asp Met Ala Ala Ala Gln Pro Gly Thr Glu Ile Phe Asn Leu Pro Ala
2225                2230                2235                2240

Val Thr Thr Ser Gly Ser Val Ser Ser Arg Gly His Ser Phe Ala Asp
                2245                2250                2255

Pro Ala Ser Asn Leu Gly Leu Glu Asp Ile Ile Arg Lys Ala Leu Met
            2260                2265                2270

Gly Ser Phe Asp Asp Lys Val Glu Asp His Gly Val Val Met Ser Gln
        2275                2280                2285

Pro Met Gly Val Val Pro Gly Thr Ala Asn Thr Ser Val Val Thr Ser
    2290                2295                2300

Gly Glu Thr Arg Arg Glu Glu Gly Asp Pro Ser Pro His Ser Gly Gly
2305                2310                2315                2320

Val Cys Lys Pro Lys Leu Ile Ser Lys Ser Asn Ser Arg Lys Ser Lys
                2325                2330                2335

Ser Pro Ile Pro Gly Gln Gly Tyr Leu Gly Thr Glu Arg Pro Ser Ser
            2340                2345                2350

Val Ser Ser Val His Ser Glu Gly Asp Tyr His Arg Gln Thr Pro Gly
        2355                2360                2365

Trp Ala Trp Glu Asp Arg Pro Ser Ser Thr Gly Ser Thr Gln Phe Pro
    2370                2375                2380
```

```
Tyr Asn Pro Leu Thr Met Arg Met Leu Ser Ser Thr Pro Pro Thr Pro
2385                2390                2395                2400

Ile Ala Cys Ala Pro Ser Ala Val Asn Gln Ala Ala Pro His Gln Gln
                2405                2410                2415

Asn Arg Ile Trp Glu Arg Glu Pro Ala Pro Leu Leu Ser Ala Gln Tyr
            2420                2425                2430

Glu Thr Leu Ser Asp Ser Asp Asp
        2435                2440
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<212> PRT
<213> Drosophila sp.

<400> 12

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Met Ser Ala Tyr Gln Gln Arg Leu Pro Ser Asn Ala Ala Ser Ile His
  1               5                  10                  15

Ser Pro His Trp Ser Tyr Arg Ala Leu Glu Gln Gln Gln Gln Tyr Ala
             20                  25                  30

Lys Gln Ala Ala His Leu Gln Gln Gln Gln His Gln Ser His Gln Gln
         35                  40                  45

Gln Gln Gln Gln Gln Gln Asp Gln Arg Thr Asn Leu His Leu Gln Ile
     50                  55                  60

His His His His Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
 65                  70                  75                  80

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Lys Gln Gln Gln His
                 85                  90                  95

His Met Gln Gln Gln Gln Gln Gln Pro Leu Ser Pro Pro His Pro
            100                 105                 110

Pro Gly Ser Ser Ser Asn Ser Ser Ser Ala Ala Ala Ala Ala Ala Ala
        115                 120                 125

Ala Ala Ala Ala Ala Ala Ala Val Asn Pro Gly Tyr Pro Pro Ser Ser
    130                 135                 140

Ala Ala Ala Ala Ala Val Asn Ser Gly Tyr Pro Pro Arg Pro Pro Gln
145                 150                 155                 160

His Arg Phe Ile Gln Asn Thr Gly Tyr Ser Ile Ala Pro Ala Pro Thr
                165                 170                 175

Tyr Arg Asp Asn Pro Tyr Ser Arg His Thr Gln Ile Gln Gln Gln Gln
            180                 185                 190

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
        195                 200                 205
```

```
Gln Gln Gln Gln Ala Ala Ala Ser Met Pro Glu Tyr Gln Arg Ala Ala
    210                 215                 220

Ala Arg Ala Ala Val Ala Ala Val Ser Ala Gly Lys Gly Asn Val Ser
225                 230                 235                 240

Gly Gln Ser Ser Asn Ser Ser Ser Ser Ser Ser Gly Gly Gly Gly Gly
                245                 250                 255

Gly Gly Ser Ala Gly Gly Ser Ala Pro Pro Gly Gly Gly Val Val Gln
            260                 265                 270

Val Ser Gln Ser Gly Gly Val Leu Val Met Glu Ala Met Pro His Tyr
        275                 280                 285

Ala Ser Gln Pro Asn Ser Asn Pro Ser Gln Gln Gln Gln Gln Gln Gln
    290                 295                 300

Gln Gln Gln Gln Gly Gly Asn Pro Ser Gly Ala Gly Ala Thr Ser Gly
305                 310                 315                 320

Ala Gly Gly Gly Gly Gly Gly Ser Gly Gly Ser Val Met Val Gly Ser
                325                 330                 335

Leu Gly Arg Ile Leu Met Pro His Pro Gln Ala Leu Gln Tyr Thr Ser
            340                 345                 350

Glu Tyr Leu Thr Asn Ala Thr Ala Ala Val Ala Ala Ala Met Val Asn
        355                 360                 365

Gln Arg Gln His Leu Gln Leu Gln Gln Gln Gln Gln Gln Gln His Pro
    370                 375                 380

Pro Glu Pro Phe Gly Gly Gln Gln Pro Tyr Lys Lys Gln Arg Leu Ser
385                 390                 395                 400

Glu Ala Asn Ala Asn Asn Met Asn His Leu Pro Pro His Pro Gln Gln
                405                 410                 415

Gln His Gln Gln Gln Gln Gln Gln Gln Gln Gln His Gln Arg Ser Ser
            420                 425                 430

Pro Ala Gln Val Gln Gln Gln Gln Gln Gln Gln Met Asn Ser Ser Arg
        435                 440                 445

Gln Ser His Asn Asp Met Cys Arg Gln Val Val Thr Thr Pro Met Gly
    450                 455                 460

Met Gln Leu Lys Val Glu Thr Leu Pro Gln Gln Gln Gln Lys Gln Gln
465                 470                 475                 480

Gln His Gln Gln Gln Gln Gln Gln Gln Gln Gln Gly Arg Ser Gln Pro
                485                 490                 495

Val Val Ser Ser Met Ser Thr Val Val Ser Gln Pro Val Gly Thr Val
            500                 505                 510
```

```
Thr Val Thr Thr Ala Gly Leu Ser Ala Ser His Ser Gly Ser Ser Gly
        515                 520                 525

Asn Val Ala Ala Gly Leu Gly Thr Gly Asn Thr Gly Ser Ala Ser Thr
    530                 535                 540

Glu Ala Tyr His Pro Gln Val Glu Ala Ile Ser Pro Thr Leu Pro Ser
545                 550                 555                 560

Asp Ser Ser Ile Glu Glu Arg Gly Arg Thr Ser Ala Lys Glu Asp Leu
                565                 570                 575

Leu Met Gln Ile Gln Lys Val Asp Asn Glu Ile Lys Ser Ala Glu Thr
            580                 585                 590

Thr Met Glu Thr Leu Arg Lys Lys Glu Lys Ser Leu Met Glu Glu Ala
        595                 600                 605

Ala Leu Ala Lys Glu Gln Arg Ala Ala Lys Glu Leu Asn Asp Asn Asn
    610                 615                 620

Asn Asp Gln Glu Pro Met Val Glu Leu Ser Trp Arg Ser Gln Met Leu
625                 630                 635                 640

Ala Glu Lys Ile Tyr Ala Ala Asn Arg Lys Thr Ala Gln Ala Gln His
                645                 650                 655

Ser Met Leu Gln Asn Ala Ala Ala Asp Glu Ser Ser Pro Gly Ser Val
            660                 665                 670

Ala Gly Arg Pro Trp Leu Pro Leu Tyr Asn Gln Pro Leu Asp Val Glu
        675                 680                 685

Ala Leu Ala Met Leu Ile Arg Gln His Gln Ser Gln Ile Arg Ala Pro
    690                 695                 700

Leu Leu Leu His Ile Arg Lys Leu Lys Ala Glu Arg Trp Ala His Asn
705                 710                 715                 720

Gln Gly Leu Val Glu Lys Tyr Thr Lys Asp Gln Ala Asp Trp Gln Arg
                725                 730                 735

Arg Cys Glu Arg Met Glu Ala Ser Ala Lys Arg Lys Ala Arg Glu Ala
            740                 745                 750

Lys Asn Arg Glu Phe Phe Glu Lys Val Phe Thr Glu Leu Arg Lys Gln
        755                 760                 765

Arg Glu Asp Lys Glu Arg Phe Asn Arg Val Gly Ser Arg Ile Lys Ser
    770                 775                 780

Glu Ala Asp Leu Glu Glu Ile Met Asp Gly Leu Gln Glu Gln Ala Leu
785                 790                 795                 800

Glu Asp Lys Lys Met Arg Ser Tyr Ala Val Ile Pro Pro Leu Met His
                805                 810                 815
```

```
Asp Ala Arg Gln Arg Arg Cys Ala Tyr His Asn Glu Asn Gly Leu Ile
          820                 825                 830

Glu Asp Met Val Ala Val His Gln Gln Arg Lys Ala Leu Asn Met Trp
        835                 840                 845

Thr Ala Gly Glu Lys Glu Thr Phe Lys Glu Lys Tyr Leu Gln His Pro
    850                 855                 860

Lys Asn Phe Gly Ala Ile Ala Ala Ser Leu Asp Arg Lys Ser Pro Gln
865                 870                 875                 880

Asp Cys Val Arg Tyr Tyr Tyr Leu Ser Lys Lys Thr Glu Asn Tyr Lys
                885                 890                 895

Gln Leu Leu Arg Lys Ser Arg Gln Arg Thr Arg Ser Ser Arg Asn Pro
            900                 905                 910

Ala Lys Ala Gln Ala Ala Gln Pro Gln Cys Ile Ile Asp Ser Met Thr
        915                 920                 925

Thr Gly Val Met Thr Arg Leu Gln Arg Glu Gln Gln Gln Lys Ser Gly
    930                 935                 940

Gly Arg Ser Ser Ala Val Ala Glu Arg Glu Arg Ala Glu Arg Ala Ala
945                 950                 955                 960

Glu Arg Glu Arg Val Ala Glu Lys Ala Ala Ala Asp Ala Ala Lys Ala
                965                 970                 975

Ala Glu Ser Ala Ala Glu Lys Ala Ser Ala Ala Thr Lys Ala Val Glu
            980                 985                 990

Ala Thr Ala Ala Gly Glu Lys Val Ala Lys Ala Ala Ala Ala Ala Ala
        995                1000                1005

Ala Ala Ala Ala Thr Thr Ala Thr Thr Ala Thr Thr Thr Thr Ser Ser
   1010                1015                1020

Ser Thr Ser Ser Ser Ser Ser Ser Ala Ser Ser Ala Ser Thr Ala Ser
1025                1030                1035                1040

Ser Ser Thr Ala Ser Pro Ala Thr Leu Ala Gly Ile Ala Ala Asp Lys
                1045                1050                1055

Thr Asp Ala Gly Lys Thr Ala Ser Ala Ser Asp Lys Asn Ala Ala Thr
            1060                1065                1070

Ala Gly Gly Pro Thr Ala Thr Gly Thr Pro Thr Ala Ala Thr Thr Pro
        1075                1080                1085

Ala Thr Ala Thr Ala Pro Pro Glu Ile Ser Ala Gly Gly Glu Ala Lys
   1090                1095                1100

Ser Lys Asn Ala Glu Glu Glu Ala Ala Ala Thr Ala Gly Ala Ala Thr
1105                1110                1115                1120
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Val Ala Thr Ala Gly Thr Pro Ala Thr Gly Ala Ser Ala Ala Ser Ala
1125 1130 1135

Gly Glu Ala Thr Thr Ala Thr Gly Ala Thr Ala Thr Ala Ala Ala Lys
1140 1145 1150

Gly Val Gly Lys Pro Glu Thr Ala Thr Glu Pro Ala Gly Thr Ala Ala
1155 1160 1165

Lys Gly Ala Asp Ser Arg Pro Asp Ala Asn Asp Pro Leu Ala Lys Thr
1170 1175 1180

Ala Ser Lys Ala Ile Asn Ala Glu Gly Tyr Asn Ala Ile Gly Gly Asn
1185 1190 1195 1200

Ser Ser Ser Ser Ser Ser Asn Ala Thr Gly Ala Ser Ala Pro Val Gln
1205 1210 1215

Gly Val Thr Leu Asn Gly Phe Lys Pro Gly Tyr Gln Thr Val Val Met
1220 1225 1230

Ala Asn Val Lys Ala Ser Thr Gly Gly Asp Asp Ser Gly Ala Asn Ala
1235 1240 1245

Gly Gly Ala Ala Pro Gly Ser Leu Ala Ala Thr Asn Ala Ser Ile Ala
1250 1255 1260

Thr Ser Gly Asp Lys Ile Val Lys Thr Thr Pro Ser Ser Arg Ala Pro
1265 1270 1275 1280

Asn Ser Thr Ser Ser Thr Ala Ala Asn Glu Ser Ser Ser Gly Ala Gly
1285 1290 1295

Val Asn Thr Tyr Gly His Thr Ala Thr Thr Ala Gly Asn Tyr Leu Gly
1300 1305 1310

Gln Lys Leu Lys Ala Ala Gln Val Glu Gly Leu Gly Ala Gly Asn Glu
1315 1320 1325

Leu His Ser Asp Val Ser Glu Ser Lys Arg Lys Arg Phe Glu Leu Asn
1330 1335 1340

Ser Gly Glu Ala Gly Gly Asn Ala Thr Ser Ala Met Thr Asn Ser Ser
1345 1350 1355 1360

Thr Ser Gly Ser Met Asn Ile Ser Asn Ser His Gly Leu Lys Ala Asn
1365 1370 1375

Ala Lys Asp Gly Ser Met Met Ala Lys Thr Ser Met Ala Ser Thr Ser
1380 1385 1390

Ser Ala Ser Val Val Val Thr Ser Thr Pro Ser Ala Ser Ser Ser Ser
1395 1400 1405

Leu Ser Ser Ala Ser Ser Met Leu Leu Ile Ser Ala Ala Ser Val Met
1410 1415 1420

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Ser Thr Ala Ala Gly Ala Thr Ser Ser Ser Thr Ala Thr Thr Thr Ala
1425                1430                1435                1440

Thr Ala Ser Ala Ile Ser Leu Pro Leu Leu Ala Asp Gly Ser Gly Asn
                1445                1450                1455

Ser Met Val Asn Ala Asn Glu Ile Leu Ala Leu Asp Gly Lys Asp Lys
            1460                1465                1470

Leu Ala Ser Cys Phe Val Cys Lys Ala Glu Ala Cys Pro Arg Thr Arg
        1475                1480                1485

Pro Leu Lys Lys Gly Arg Gly Gln Gln Tyr Gly Ile Pro Asp Glu Thr
    1490                1495                1500

Ile Pro Ala Gly Ala Arg Val Cys Asn Ser Cys Gln Cys Lys Ser Val
1505                1510                1515                1520

Arg Ser Arg Tyr Pro Asn Cys Pro Leu Pro Thr Cys Pro Asn Pro Lys
                1525                1530                1535

Asp Arg Ala Gln Arg Leu Arg Asn Ile Pro Ser Arg Leu Phe Glu Leu
            1540                1545                1550

Ala Pro Glu Val Arg Asp Pro Leu Met Ala Glu Phe Gln Ile Pro Pro
        1555                1560                1565

His Ala Thr Arg Cys Cys Ser Ala Cys Leu Met Arg Ile Arg Arg Lys
    1570                1575                1580

Leu Asp Pro Gln Leu Asn Leu Thr Asp Gly Ser Ser Gly Gly Ala Gly
1585                1590                1595                1600

Ser Gly Ser Gly Gly Asp Glu Thr Asp Val Ser Thr Ser Ser Cys Asp
                1605                1610                1615

Glu Arg Glu Pro Gly Gly Ser Asp Thr Ala Ser Val Glu Ser Pro Glu
            1620                1625                1630

Asn Leu Gln Arg His Lys Ser Leu Thr Met Val Lys Gln Gln Gln Gln
        1635                1640                1645

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
    1650                1655                1660

Gln Gln Gln Leu Ser Gln Pro Gln Pro Pro Pro Pro Ala Pro Gln Gln
1665                1670                1675                1680

Gln Lys Gly Ser Ser Gly Arg Gly Gly Asp Gln Gly Thr Pro Leu Ile
                1685                1690                1695

Ile Thr Pro Thr Arg Met Ser Ser Lys Ser Gly Ser Gly Gly Ala Gln
            1700                1705                1710

Thr Ala Gly Asp Asn Glu Arg Leu Leu Pro Pro Ala Ala Gly Gln Ala
        1715                1720                1725
```

Pro Lys Lys Gln Lys Thr Ser Glu Glu Tyr Asp Ser Ser Ala Thr Glu
1730 1735 1740

Thr Ala Asp Glu Glu Asn Glu Asn Ser Pro Ala Asn Arg Gln Ser Pro
1745 1750 1755 1760

Lys Val Leu Phe His Gly His Gly His Gly His Gly Gly His Ala Asn
1765 1770 1775

Asn Val Ala Gly Leu Gln Pro Pro Val Ala Asn Met Gly Thr Gly Gly
1780 1785 1790

Gly Val Gln Pro Gly Gly Ala Ala Gly Gln Gln Val Asn Gly Pro Ile
1795 1800 1805

Ser Met Arg Arg Glu Ala Val Asn Asn Val Gln Asp Cys Val Phe Ser
1810 1815 1820

Val Ile Glu Arg Ser Leu Lys His Lys Gly Pro Gln Pro Lys Gly Gly
1825 1830 1835 1840

Gln Gly Gln Gln Gln Gly Gln Gly Gln Gly Gln Gly Gln Gly Gln Gly
1845 1850 1855

Gln Thr Pro Gly Gln Ser Gln Ser Pro Ser Gln Gln Gln Gln Gln Gln
1860 1865 1870

Gln Gln Gln Gln Ser Ala Asn Asn Leu Glu Arg Lys Glu Leu Thr Ile
1875 1880 1885

Val Arg Glu Tyr Arg Gln Asp Pro Gly Ile Leu Lys Gln Gln Gln Gln
1890 1895 1900

Gln Gln Gln Ala Gly Gly Ala Pro Pro Thr Ser Ala Ala Gly Ser Leu
1905 1910 1915 1920

Pro His Gly Thr Ser Val Gln Lys Leu Thr Thr Arg Pro Ala Ala Val
1925 1930 1935

Ala Pro Pro Pro Pro Ala His Pro Leu Thr Pro Thr Ser Ile Gly Cys
1940 1945 1950

Ala Gly Ser Asn Asn Gly Thr Ser Asp Ser Leu Ala Thr Leu Ser Val
1955 1960 1965

Val Asn Ser His Met Gly Met Val Gly Ile Gly His Pro Gly Pro Met
1970 1975 1980

Ala His Ala Ser Ser Ala Gly Gly Ile Gly Val Asp Lys Ala Thr Ile
1985 1990 1995 2000

Thr Pro Val Val Lys Ser Ser Ser Gly Ser Ser Lys Ser Gly Gly Gly
2005 2010 2015

Ser Ala Ser Ser His Ser Thr Ala Thr Pro Pro Glu Thr Ile Ile Tyr
2020 2025 2030

Asn Val Pro Val Ala His Pro Gln Arg Gly Ile Pro Pro Pro Ser Gln
2035 2040 2045

His Ser Val His Pro Ala His Pro Ser His Thr Gln His Pro Ala His
2050 2055 2060

Pro Gln His Ser Ser His Gly Gln His Thr Gln Leu Gln Val Pro Glu
2065 2070 2075 2080

Pro Glu Pro Gln Thr Leu Asp Leu Ser Ile Lys Lys Pro Pro Arg Asp
2085 2090 2095

Gly His Ser Pro His Thr Gly Ala Gly Gly Ser Ser Ser Ser Gly Ser
2100 2105 2110

Gly Ser Gly Gly Pro Ser Ser Ser Asp Arg His His Gly Pro Pro Pro
2115 2120 2125

Pro Thr Met Ser Met Lys His Ile Val Arg Ser Gly Gly Met Tyr Arg
2130 2135 2140

Gly Asp Thr Val Thr Val Pro Ser Leu Ala Ala Pro Ser Ser Tyr Leu
2145 2150 2155 2160

Tyr Pro Thr Arg Ser Val Lys Ser Ile Gly Gly Gly Gly Val Val Pro
2165 2170 2175

Gly Val Leu Pro Gly Val Pro Gly Ile Ala Leu Tyr Leu Gln Pro Val
2180 2185 2190

Pro Val Pro Val Pro Ile Ser Ile Ser Gly Gln Gly Gln Leu Pro Pro
2195 2200 2205

Lys Ala Gly Gln Pro Pro Pro Ala Gln Pro Pro Ser Gly Arg Gly Val
2210 2215 2220

Ala Lys Val Pro Pro Lys Leu Ser Pro Gln Gln Ala His His Leu His
2225 2230 2235 2240

Pro Ser His Gly His Ser Pro Ser Gln Gln Gln Gln Gln Gln Gln Gln
2245 2250 2255

Gln Gln Gln Gln Gln Gln Gln Gln Ala Ala Ala Ala Gln Gln Gln Leu
2260 2265 2270

Leu Val Lys Ser Gly Ser Ile Ile His Gly Thr Pro Ala Asn Ser Ala
2275 2280 2285

Gln Gln Gln Ile Ile Val His Ala Pro Ala Thr Ala Ala Ala Ala Pro
2290 2295 2300

Ser Ser Leu Phe Ser Pro Lys Phe Asp Gly Leu Val Arg Gln Thr Thr
2305 2310 2315 2320

Pro Glu Gly Val Gly Ser Val Gly Pro Gly Gly Ala Ser Gly Ser Gly
2325 2330 2335

Lys His Gly Ser Ile Thr Gln Gly Thr Pro Leu His Met Pro Pro His
2340 2345 2350

His Leu Glu Ser Lys Arg Pro Tyr Glu Ser Tyr Tyr Lys Ser Ser Gln
2355 2360 2365

Arg His Ser Pro Ala Gln Gln Pro Gly Gly Asn Gln Gln Leu Pro Pro
2370 2375 2380

Pro Pro Gln Gln Ser Ser Pro Gln Ala Pro Pro Pro Gln Gly Tyr Gly
2385 2390 2395 2400

Val Gly Val Ser Ser Pro Tyr Ala Arg Ser Pro Phe Ala Gly Val Val
2405 2410 2415

Glu Gln Pro Gln Val Leu Ser Thr Arg Gln Ile Val Met His Asp Tyr
2420 2425 2430

Ile Thr Ser Gln Gln Met Gln Gly Gln Gln Gln Gln Gln Gln Gln Gln
2435 2440 2445

Gln Gln Gln Gln Arg Asn Met Ser Arg Gly Ser Ser Ala Ser Gly Gly
2450 2455 2460

Gly Gly Gly Gly Gly Ser Asp Lys Glu Ser Pro Ser Pro Arg Asn Ser
2465 2470 2475 2480

Val Gly Ser Ala Ser Gly Phe Ala Tyr Gly Gly Asp Lys Glu Ser Ala
2485 2490 2495

Pro Arg Gly Arg Pro Glu Tyr Ser Ser Arg Ala Ser Pro Ala Asp His
2500 2505 2510

Val Asn Ser Thr Pro Ser Pro His Arg Thr Pro Pro Pro Gln Arg Gln
2515 2520 2525

Gly Val Ile Gln Arg His Asn Thr Gly Ser Lys Pro Pro Ser Pro Ala
2530 2535 2540

Ala Pro Pro Pro Ser Arg Met His Met Pro Pro Tyr Gln Tyr Ala Pro
2545 2550 2555 2560

Ser Gly His Asp Ala Leu Ala Ser Phe Val Asp Val Ala Val Gln Gln
2565 2570 2575

Pro Gln Leu Pro Val Pro Ser Gln Lys Asp Asp Lys Ser Pro Gly Pro
2580 2585 2590

Ser Thr Ala Pro Gly Gln Val Pro Gly Ser Gly Pro Pro Leu Gly Pro
2595 2600 2605

Ser Pro Leu Pro Pro His Ala Val Val Gly Val Ala Gln Pro Pro Pro
2610 2615 2620

Pro Thr Ala His His Asp Gln Arg Tyr Arg Asp Leu Thr Leu His His
2625 2630 2635 2640

His His His Thr Leu Val Gln Gln Gln Ile Ala Gln Gln Gln His Tyr
2645 2650 2655

Arg Ser Leu Asn Val Ala Ala Gln Val Asp Met Gln Arg Gln Met Asp
2660 2665 2670

Gln Ala Lys Arg Val Met Arg His Gln Gln His Gln Val Gln Gln Gln
2675 2680 2685

Gln Gln Gln Gln Gln Gln Gln Gln His Asn His Ala Leu Glu Arg Asp
2690 2695 2700

Arg Glu Met Gln Glu Arg Met Arg Glu Arg Asp Arg Glu Arg Glu Arg
2705 2710 2715 2720

Glu Arg Glu Arg Glu Gln Arg Glu Arg Glu Arg Glu Arg Glu Arg Glu
2725 2730 2735

Arg Glu Arg Glu Arg Glu Arg Arg Glu Gln Asp Arg Ala Arg Arg Val
2740 2745 2750

Val Ala Glu Glu Arg Glu His Asp Ser Arg Arg Met Glu Arg Met Phe
2755 2760 2765

Ala Gly Asn Val Val Thr Gly Ser Gly Gly Ala Gly Gly Gly Gly Pro
2770 2775 2780

Ser Pro Gly Gln Phe Leu Arg Ala Ser Val Pro Glu Thr Gly Pro Pro
2785 2790 2795 2800

Arg Ser Ile Pro Asp Arg Glu Arg Glu Ser Tyr Tyr Arg Gln Ala His
2805 2810 2815

Gly Gly Pro Ala Pro Glu Asp Thr Pro Gly Gln Leu Ser Ala Gln Ser
2820 2825 2830

Leu Ile Asp Ala Ile Ile Lys His Glu Ile Asn Arg Ser Asn Asp Ala
2835 2840 2845

Thr Ala Gly Pro Gly Arg Glu Phe Pro Arg Pro Ser Phe Val His Ala
2850 2855 2860

Pro Leu Pro Pro Arg Gly Ser Gly Ser Gly Gly Gly Thr Gly Thr Arg
2865 2870 2875 2880

Ser Ser Pro Ala Asn Val Leu His Pro Met Tyr Leu Arg Asp Leu Arg
2885 2890 2895

Gln Pro Leu Asp Gly Gly Ala Gly Ser Met Leu Thr Ala Glu Asn Asn
2900 2905 2910

Gly Lys Pro Ser Ser Ser Gly Ser Pro Ser Val Ile Asn Ile Asp Leu
2915 2920 2925

Asp Gln Glu Arg Ile Ser Ala Ala Ala Ala Ala Val Ala Gln Gln Gln
2930 2935 2940

```
Gln Gln Gln Gln Ala Pro Pro Pro Ser Gln Ser Ser Gln Ser Arg Ser
2945                2950                2955                2960

Val His Gly Gln Leu Arg Thr Pro Thr Ser Gln Ser Gly Gly Ser Ala
                2965                2970                2975

Pro Ser Pro Gln Gln Ile His Thr Lys Ser Ile Thr Phe Gly Glu Leu
            2980                2985                2990

Thr Asp Ser Ile Ile Thr Ser Asp Tyr Gly Thr Asn Pro His Leu Arg
        2995                3000                3005

Pro Pro Tyr Met Ala Tyr Leu Gln Glu Thr Gln Ser Ile Leu Pro Pro
    3010                3015                3020

Asp Arg Trp Lys Gln Asn Arg Arg Met Gln Gln Lys Ala Glu Glu Ala
3025                3030                3035                3040

Asn Asp His Ser Gln Gln Gln Gln Gln Gln Gln His Gln Gln Gln His
                3045                3050                3055

His Ala Gln Gln Gln Gln Gln Gln Gln Gln Gln His His Ala Gln Gln
            3060                3065                3070

His His Pro Gln Met Pro Gly Thr Gly Ser Gly Ser Ala Pro Gly Gly
        3075                3080                3085

Ala Gly Gln Gly Gly Gly Ser Gly Gly Pro Gly Ser Gly Gly Gly Gly
    3090                3095                3100

Ala Gly Arg Ala Ser Thr Pro Gly Glu Asp Gly Arg Asn Ile Ile Arg
3105                3110                3115                3120

Met Pro Gln Ala Val Ser Pro Arg Lys Phe Asn His Glu Met Met Leu
                3125                3130                3135

His His Val Met Gly Thr Thr Gly Ala Gly Gly Glu Ala Gly Gln Phe
            3140                3145                3150

Phe Leu Pro Ser Arg Val Val Leu Pro Glu Gln Arg Gly Thr Pro Ser
        3155                3160                3165

Gly Gly Gly Gly Ala Pro Gly Ala Gly Gly Pro Gly Ser Gly Gly Gly
    3170                3175                3180

Ala Thr Thr Ile Glu Lys Tyr Val Lys Thr Arg Ile Ala Glu Val Met
3185                3190                3195                3200

Arg Asp Asp Ile Gly Tyr Gly Lys Asn Arg Thr Val Glu Val Arg Thr
                3205                3210                3215

Glu Asp Glu Val Thr Ala Asp Met Val Ala His Ser His Ala Ala Val
            3220                3225                3230

His Ala Ala His Val Ala His Ala Ala His Val Ala His Ala Ala Ala
        3235                3240                3245
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```
Met Glu Leu Gln His Arg Ser Lys Glu Pro Pro Pro Pro Glu Ile Ser
   3250                3255                3260

Val Ser Arg Lys Thr Pro Asn Gln Tyr Glu Val Val Asp Ala Ser Gly
3265                3270                3275                3280

Arg Arg Ser Ala Gly Ser Gly Ser Val Ser Val Ser Val Ser Gly Ala
               3285                3290                3295

Asn Ser His His Ser Pro Tyr His Pro Pro Ala Ala Ala Tyr Ala Pro
           3300                3305                3310

Ser Thr Tyr Ala Phe Pro Tyr Ser Ala Leu Asn Val Pro Gly Ala Ala
       3315                3320                3325

Gly Gly Leu Pro Pro His Gln Pro Leu Gln Leu Ala His Gln Ala Val
   3330                3335                3340

Ala Pro Pro Gly Ala Phe Ala Lys Ala Lys Ala Ala His Ala Leu Ser
3345                3350                3355                3360

Glu Leu Gly Ala Val Gly Gly Gly Val Ser Leu Val Val Gly Gly Gly
               3365                3370                3375

Ser Gly Gly Ile Ala Gly Gly Pro Gly Gly Val Ser Val Gly Val Gly
           3380                3385                3390

Val Pro Gly Gly Gly Gly Pro Gly Ser Gly Gly Gly Gly Gly Gly Gly
       3395                3400                3405

His Asn Ser Ser Ser Ser Gln Ala Ser Ala Ala Val Ala Ala Ala Val
   3410                3415                3420

Ala Ala Ala Ala Ser Glu Ser Lys Pro Leu Leu Leu Ser Lys Tyr Asp
3425                3430                3435                3440

Ala Leu Ser Asp Glu Asp
               3445


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<400> 13
Met Ala Pro Lys Lys Lys Arg Lys Val
  1               5


<210> 14
<211> 51
<212> PRT
<213> Drosophila sp.

<400> 14
Phe Arg His Ile Thr Glu Ile Thr Ile Leu Thr Val Gln Leu Ile Val
  1               5                  10                  15
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Glu Phe Ala Lys Gly Leu Pro Ala Phe Tyr Lys Ile Pro Gln Glu Asp
20 25 30

Gln Ile Thr Leu Leu Lys Ala Cys Ser Ser Glu Val Met Met Leu Arg
35 40 45

Met Ala Arg
50

<210> 15
<211> 51
<212> PRT
<213> Rattus sp.

<400> 15
Phe Ser Glu Phe Thr Lys Ile Ile Thr Pro Ala Ile Thr Arg Val Val
1 5 10 15

Asp Phe Ala Lys Lys Leu Pro Met Phe Ser Glu Leu Pro Cys Glu Asp
20 25 30

Gln Ile Ile Leu Leu Lys Gly Cys Cys Met Glu Ile Met Ser Leu Arg
35 40 45

Ala Ala Val
50

<210> 16
<211> 51
<212> PRT
<213> Homo sapiens

<400> 16
Trp Asp Lys Phe Ser Glu Leu Ala Thr Lys Cys Ile Ile Lys Ile Val
1 5 10 15

Glu Phe Ala Lys Arg Leu Pro Gly Phe Thr Gly Leu Ser Ile Ala Asp
20 25 30

Gln Ile Thr Leu Leu Lys Ala Ala Cys Leu Asp Ile Leu Met Leu Arg
35 40 45

Ile Cys Thr
50

<210> 17
<211> 51
<212> PRT
<213> Rattus sp.

<400> 17
Trp Glu Glu Phe Ser Met Ser Phe Thr Pro Ala Val Lys Glu Val Val
1 5 10 15

```
Glu Phe Ala Lys Arg Ile Pro Gly Phe Arg Asp Leu Ser Gln His Asp
            20                  25                  30

Gln Val Asn Leu Leu Lys Ala Gly Thr Phe Glu Val Leu Met Val Arg
        35                  40                  45

Phe Ala Ser
    50
```

<210> 18
<211> 275
<212> PRT
<213> Drosophila sp.

<400> 18

```
Lys Glu Asp Leu Leu Met Gln Ile Gln Lys Val Asp Asn Glu Ile Lys
 1               5                  10                  15

Ser Ala Glu Thr Thr Met Glu Thr Leu Arg Lys Lys Glu Lys Ser Leu
            20                  25                  30

Met Glu Glu Ala Ala Leu Ala Lys Glu Gln Arg Ala Ala Lys Glu Leu
        35                  40                  45

Asn Asp Asn Asn Asn Asp Gln Glu Pro Met Val Glu Leu Ser Trp Arg
    50                  55                  60

Ser Gln Met Leu Ala Glu Lys Ile Tyr Ala Ala Asn Arg Lys Thr Ala
65                  70                  75                  80

Gln Ala Gln His Ser Met Leu Gln Asn Ala Ala Ala Asp Glu Ser Ser
                85                  90                  95

Pro Gly Ser Val Ala Gly Arg Pro Trp Leu Pro Leu Tyr Asn Gln Pro
            100                 105                 110

Leu Asp Val Glu Ala Leu Ala Met Leu Ile Arg Gln His Gln Ser Gln
        115                 120                 125

Ile Arg Ala Pro Leu Leu Leu His Ile Arg Lys Leu Lys Ala Glu Arg
    130                 135                 140

Trp Ala His Asn Gln Gly Leu Val Glu Lys Tyr Thr Lys Asp Gln Ala
145                 150                 155                 160

Asp Trp Gln Arg Arg Cys Glu Arg Met Glu Ala Ser Ala Lys Arg Lys
                165                 170                 175

Ala Arg Glu Ala Lys Asn Arg Glu Phe Phe Glu Lys Val Phe Thr Glu
            180                 185                 190

Leu Arg Lys Gln Arg Glu Asp Lys Glu Arg Phe Asn Arg Val Gly Ser
        195                 200                 205

Arg Ile Lys Ser Glu Ala Asp Leu Glu Glu Ile Met Asp Gly Leu Gln
    210                 215                 220
```

```
Glu Gln Ala Leu Glu Asp Lys Lys Met Arg Ser Tyr Ala Val Ile Pro
225                 230                 235                 240

Pro Leu Met His Asp Ala Arg Gln Arg Arg Cys Ala Tyr His Asn Glu
                245                 250                 255

Asn Phe Leu Ile Glu Asp Met Val Ala Val His Gln Gln Arg Lys Ala
            260                 265                 270

Leu Asn Met
        275
```

<210> 19
<211> 262
<212> PRT
<213> Mus sp.

<400> 19

```
Lys Glu Glu Leu Ile Gln Ser Met Asp Arg Val Asp Arg Glu Ile Ala
  1               5                  10                  15

Lys Val Glu Gln Gln Ile Leu Lys Leu Lys Lys Lys Gln Gln Gln Leu
            20                  25                  30

Glu Glu Glu Ala Ala Lys Pro Pro Glu Pro Glu Lys Pro Val Ser Pro
        35                  40                  45

Pro Pro Val Glu Gln Lys His Arg Ser Ile Val Gln Ile Ile Tyr Asp
    50                  55                  60

Glu Asn Arg Lys Lys Ala Glu Glu Ala His Lys Ile Phe Glu Gly Leu
65                  70                  75                  80

Gly Pro Lys Val Glu Leu Pro Leu Tyr Asn Gln Pro Ser Asp Thr Lys
                85                  90                  95

Val Tyr His Glu Asn Ile Lys Thr Asn Gln Val Met Arg Lys Lys Leu
            100                 105                 110

Ile Leu Phe Phe Lys Arg Arg Asn His Ala Arg Lys Gln Arg Glu Gln
        115                 120                 125

Lys Ile Cys Gln Arg Tyr Asp Gln Leu Met Glu Ala Trp Glu Lys Lys
    130                 135                 140

Val Asp Arg Ile Glu Asn Asn Pro Arg Arg Lys Ala Lys Glu Ser Lys
145                 150                 155                 160

Thr Arg Glu Tyr Tyr Glu Lys Gln Phe Pro Glu Ile Arg Lys Gln Arg
                165                 170                 175

Glu Gln Gln Glu Arg Phe Gln Arg Val Gly Gln Arg Gly Ala Gly Leu
            180                 185                 190

Ser Ala Thr Ile Ala Arg Ser Glu His Glu Ile Ser Glu Ile Ile Asp
        195                 200                 205
```

```
Gly Leu Ser Glu Gln Glu Asn Asn Glu Lys Gln Met Arg Gln Leu Ser
    210                 215                 220

Val Ile Pro Pro Met Met Phe Asp Ala Glu Gln Arg Arg Val Lys Phe
225                 230                 235                 240

Ile Asn Met Asn Gly Leu Met Glu Asp Pro Met Lys Val Tyr Lys Asp
                245                 250                 255

Arg Gln Phe Met Asn Val
            260


<210> 20
<211> 263
<212> PRT
<213> Homo sapiens

<400> 20
Lys Glu Glu Leu Ile Gln Asn Met Asp Arg Val Asp Arg Glu Ile Thr
  1               5                  10                  15

Met Val Glu Gln Gln Ile Ser Lys Leu Lys Lys Lys Gln Gln Gln Leu
            20                  25                  30

Glu Glu Glu Ala Ala Lys Pro Pro Glu Pro Glu Lys Pro Val Ser Pro
        35                  40                  45

Pro Pro Ile Glu Ser Lys His Arg Ser Leu Val Gln Ile Ile Tyr Asp
    50                  55                  60

Glu Asn Arg Lys Lys Ala Glu Ala Ala His Arg Ile Leu Glu Gly Leu
65                  70                  75                  80

Gly Pro Gln Val Glu Leu Pro Leu Tyr Asn Gln Pro Ser Asp Thr Arg
                85                  90                  95

Gln Tyr His Glu Asn Ile Lys Ile Asn Gln Ala Met Arg Lys Lys Leu
            100                 105                 110

Ile Leu Tyr Phe Lys Arg Arg Asn His Ala Arg Lys Gln Trp Lys Gln
        115                 120                 125

Lys Phe Cys Gln Arg Tyr Asp Gln Leu Met Glu Ala Leu Glu Lys Lys
    130                 135                 140

Val Glu Arg Ile Glu Asn Asn Pro Arg Arg Arg Ala Lys Glu Ser Lys
145                 150                 155                 160

Val Arg Glu Tyr Tyr Glu Lys Gln Phe Pro Glu Ile Arg Lys Gln Arg
                165                 170                 175

Glu Leu Gln Glu Arg Met Gln Ser Arg Val Gly Gln Arg Gly Ser Gly
            180                 185                 190

Leu Ser Met Ser Ala Ala Arg Ser Glu His Glu Val Ser Glu Ile Ile
        195                 200                 205
```

```
Asp Gly Leu Ser Glu Gln Glu Asn Leu Glu Lys Gln Met Arg Gln Leu
    210                 215                 220

Ala Val Ile Pro Pro Met Leu Tyr Asp Ala Asp Gln Gln Arg Ile Lys
225                 230                 235                 240

Phe Ile Asn Met Asn Gly Leu Met Ala Asp Pro Met Lys Val Tyr Lys
                245                 250                 255

Asp Arg Gln Val Met Asn Met
            260
```

<210> 21
<211> 48
<212> PRT
<213> Drosophila sp.

<400> 21

```
Trp Thr Ala Gly Glu Lys Glu Thr Phe Lys Glu Lys Tyr Leu Gln His
  1               5                  10                  15

Pro Lys Asn Phe Gly Ala Ile Ala Ala Ser Leu Asp Arg Lys Ser Pro
            20                  25                  30

Gln Asp Cys Val Arg Tyr Tyr Tyr Leu Ser Lys Lys Thr Glu Asn Tyr
        35                  40                  45
```

<210> 22
<211> 48
<212> PRT
<213> Mus sp.

<400> 22

```
Trp Thr Asp His Glu Lys Glu Ile Phe Lys Asp Lys Phe Ile Gln His
  1               5                  10                  15

Pro Lys Asn Phe Gly Leu Ile Ala Ser Tyr Leu Glu Arg Lys Ser Val
            20                  25                  30

Pro Asp Cys Val Leu Tyr Tyr Tyr Leu Thr Lys Lys Asn Glu Asn Tyr
        35                  40                  45
```

<210> 23
<211> 48
<212> PRT
<213> Homo sapiens

<400> 23

```
Trp Ser Glu Gln Glu Lys Glu Thr Phe Arg Glu Lys Phe Met Gln His
  1               5                  10                  15

Pro Lys Asn Phe Gly Leu Ile Ala Ser Phe Leu Glu Arg Lys Thr Val
            20                  25                  30
```

Ala Glu Cys Val Leu Tyr Tyr Tyr Leu Thr Lys Lys Asn Glu Asn Tyr
35 40 45

<210> 24
<211> 48
<212> PRT
<213> Caenorhabditis elegans

<400> 24
Trp Ser Pro Glu Glu Arg Ser Leu Phe Lys Ser Arg Gln Ala Asp His
1 5 10 15

Val Lys Ile Phe His Gly Leu Thr Glu Phe Phe Val Asp Lys Thr Ala
20 25 30

Ser Asp Leu Val Leu Phe Tyr Tyr Met Asn Lys Lys Thr Glu Asp Tyr
35 40 45

<210> 25
<211> 48
<212> PRT
<213> Caenorhabditis elegans

<400> 25
Trp Thr Pro Asp Glu Ile Tyr Gln Phe Gln Asp Ala Ile Tyr Gln Ser
1 5 10 15

Glu Lys Asp Phe Asp Lys Val Ala Val Glu Leu Pro Gly Lys Ser Val
20 25 30

Lys Glu Cys Val Gln Phe Tyr Tyr Thr Trp Lys Lys Asp Cys Pro Asp
35 40 45

<210> 26
<211> 49
<212> PRT
<213> Xenopus sp.

<400> 26
Trp Thr Glu Glu Glu Cys Arg Asn Phe Glu Gln Gly Leu Lys Ala Tyr
1 5 10 15

Gly Lys Asp Phe His Leu Ile Gln Ala Asn Lys Val Arg Thr Arg Ser
20 25 30

Val Gly Glu Cys Val Ala Phe Tyr Tyr Met Trp Lys Lys Ser Glu Arg
35 40 45

Tyr

<210> 27
<211> 48
<212> PRT
<213> Mus sp.

<400> 27
Trp Thr Glu Glu Glu Met Glu Val Ala Lys Lys Gly Leu Val Glu His
1 5 10 15

Gly Arg Asn Trp Ala Ala Ile Ala Lys Met Val Gly Thr Lys Ser Glu
20 25 30

Ala Gln Cys Lys Asn Phe Tyr Phe Asn Tyr Lys Arg Arg His Asn Leu
35 40 45

<210> 28
<211> 48
<212> PRT
<213> Homo sapiens

<400> 28
Trp Thr Glu Glu Glu Met Glu Thr Ala Lys Lys Gly Leu Leu Glu His
1 5 10 15

Gly Arg Asn Trp Ser Ala Ile Ala Arg Met Val Gly Ser Lys Thr Val
20 25 30

Ser Gln Cys Lys Asn Phe Tyr Phe Asn Tyr Lys Lys Arg Gln Asn Leu
35 40 45

<210> 29
<211> 48
<212> PRT
<213> Homo sapiens

<400> 29
Trp Thr Val Glu Asp Lys Val Leu Phe Glu Gln Ala Phe Ser Phe His
1 5 10 15

Gly Lys Thr Phe His Arg Ile Gln Gln Met Leu Pro Asp Lys Ser Ile
20 25 30

Ala Ser Leu Val Lys Phe Tyr Tyr Ser Trp Lys Lys Thr Arg Thr Lys
35 40 45

<210> 30
<211> 48
<212> PRT
<213> Caenorhabditis elegans

<400> 30
Trp Thr Asp Gln Glu Ile Thr Leu Phe Glu Asn Cys Tyr Gln Ile Phe
1 5 10 15

Gly Lys Asn Phe Ser Gln Ile Arg Ser Ala Leu Cys His Arg Ser Leu
20 25 30

Gln Ser Ile Val Gln Phe Tyr Tyr Glu Ser Lys Lys Arg Val Lys Tyr
35 40 45

<210> 31
<211> 49
<212> PRT
<213> Saccharomyces sp.

<400> 31
Phe Thr Asp His Glu His Ser Leu Phe Leu Glu Gly Tyr Leu Ile His
1 5 10 15

Pro Lys Lys Phe Gly Lys Ile Ser His Tyr Met Gly Gly Leu Arg Ser
20 25 30

Pro Glu Glu Cys Val Leu His Tyr Tyr Arg Thr Lys Lys Thr Val Asn
35 40 45

Tyr

<210> 32
<211> 16
<212> PRT
<213> Drosophila sp.

<400> 32
Thr Arg Gln Ile Val Met His Asp Tyr Ile Thr Ser Gln Gln Met Gln
1 5 10 15

<210> 33
<211> 16
<212> PRT
<213> Homo sapiens

<400> 33
Asn Arg Gln Thr Ile Ile Asn Asp Tyr Ile Thr Ser Gln Gln Met His
1 5 10 15

<210> 34
<211> 16
<212> PRT
<213> Mus sp.

<400> 34
Thr Arg Gln Thr Ile Leu Asn Asp Tyr Ile Thr Ser Gln Gln Met Gln
1 5 10 15

<210> 35
<211> 17
<212> PRT
<213> Drosophila sp.

<400> 35
Glu Ser Lys Pro Leu Leu Leu Ser Lys Tyr Asp Ala Leu Ser Asp Glu
1 5 10 15

Asp

<210> 36
<211> 17
<212> PRT
<213> Homo sapiens

<400> 36
Glu Pro Lys Pro Leu Leu Cys Ser Gln Tyr Glu Thr Leu Ser Asp Ser
1 5 10 15

Glu

<210> 37
<211> 18
<212> PRT
<213> Mus sp.

<400> 37
Glu Pro Ala Pro Leu Leu Ser Ala Gln Tyr Glu Thr Leu Ser Asp Ser
1 5 10 15

Asp Asp

<210> 38
<211> 14
<212> PRT
<213> Drosophila sp.

<400> 38
Val Lys Ser Gly Ser Ile Ile His Gly Thr Pro Ala Asn Ser
1 5 10

<210> 39
<211> 14
<212> PRT
<213> Drosophila sp.

<400> 39
Gly Lys His Gly Ser Ile Thr Gln Gly Thr Pro Leu His Met
1 5 10

<210> 40
<211> 14
<212> PRT
<213> Homo sapiens

<400> 40
Val Pro Gly Gly Ser Ile Thr Lys Gly Ile Pro Ser Thr Arg
1 5 10

<210> 41
<211> 14
<212> PRT
<213> Homo sapiens

<400> 41
Thr Tyr Arg Gly Ser Ile Thr His Gly Thr Pro Ala Asp Val
1 5 10

<210> 42
<211> 14
<212> PRT
<213> Homo sapiens

<400> 42
His Ile Arg Gly Ser Ile Thr Gln Gly Ile Pro Arg Ser Tyr
1 5 10

<210> 43
<211> 14
<212> PRT
<213> Homo sapiens

<400> 43
Leu Lys Glu Gly Ser Ile Thr Gln Gly Thr Pro Leu Lys Tyr
1 5 10

<210> 44
<211> 14
<212> PRT
<213> Homo sapiens

<400> 44
Ser Ser Gly Gly Ser Ile Ala Arg Gly Ala Pro Val Ile Val
1 5 10

<210> 45
<211> 14
<212> PRT
<213> Mus sp.

<400> 45
Thr Pro Pro Gly Ser Ile Leu Ile Ser Ser Pro Ile Lys Pro
1 5 10

<210> 46
<211> 14
<212> PRT
<213> Mus sp.

<400> 46
Ile Met Gly Gly Ser Ile Ser Gln Gly Thr Pro Gly Thr Tyr
1 5 10

<210> 47
<211> 14
<212> PRT
<213> Mus sp.

<400> 47
Pro Ser Val Gly Ser Ile Ser Leu Gly Leu Pro Arg Gln Gln
1 5 10

<210> 48
<211> 14
<212> PRT
<213> Mus sp.

<400> 48
Val Gln Glu Gly Ser Ile Thr Arg Gly Thr Pro Ala Ser Lys
1 5 10

<210> 49
<211> 14
<212> PRT
<213> Mus sp.

<400> 49
Ser Leu Arg Gly Ser Ile Thr Gln Gly Thr Pro Ala Leu Pro
1 5 10

<210> 50
<211> 14
<212> PRT
<213> Mus sp.

<400> 50
Val Leu Ser Gly Ser Ile Met Gln Gly Thr Pro Arg Ala Thr
1 5 10

<210> 51
<211> 14
<212> PRT
<213> Mus sp.

<400> 51
Ile Ile Glu Gly Ser Ile Ser Gln Gly Thr Pro Ile Lys Phe
1 5 10

<210> 52
<211> 14
<212> PRT
<213> Caenorhabditis elegans

<400> 52
Gln Thr Gln Gly Ser Leu Thr Ser Gly Thr Pro Phe Gln Ala
1 5 10